

# THE MILLING WORLD

AND

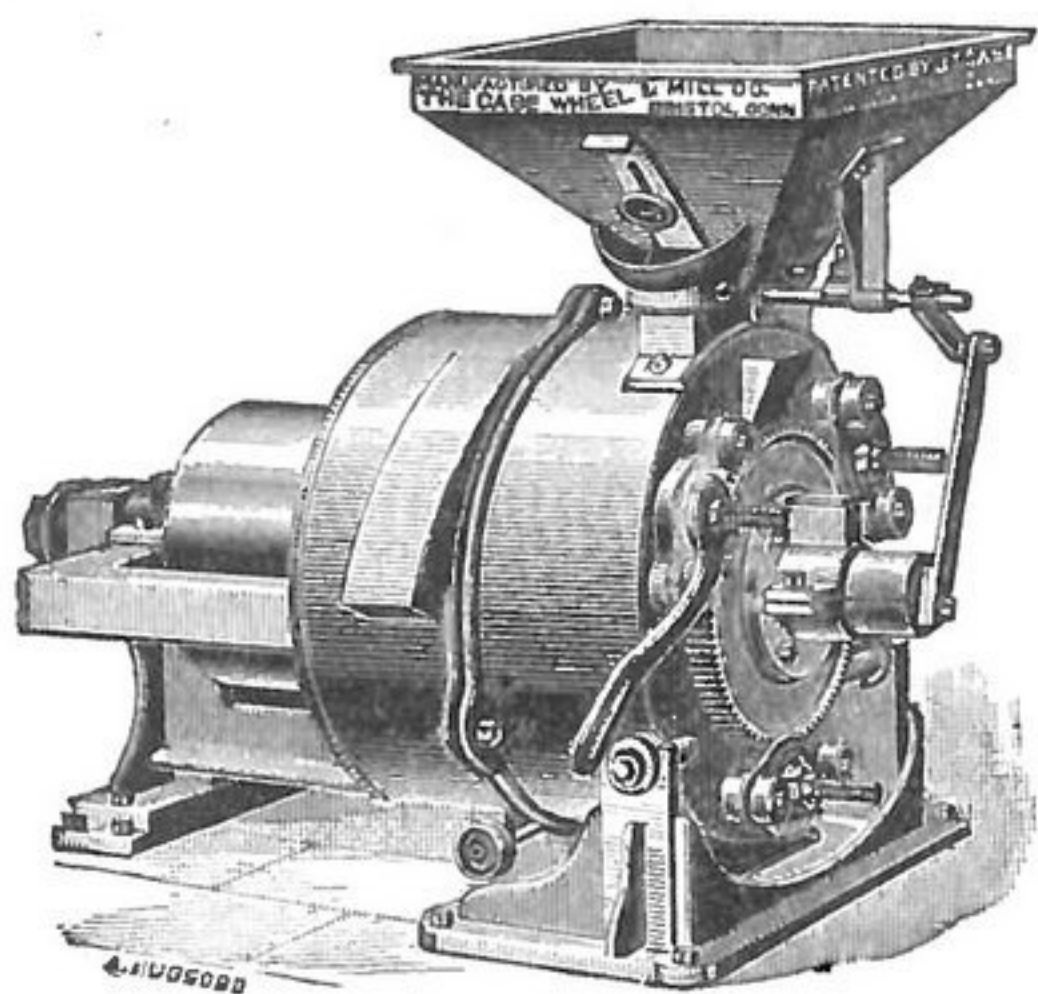
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL XXI. No. 6.

BUFFALO, N. Y., OCTOBER 7, 1889.

\$1.50 PER YEAR.



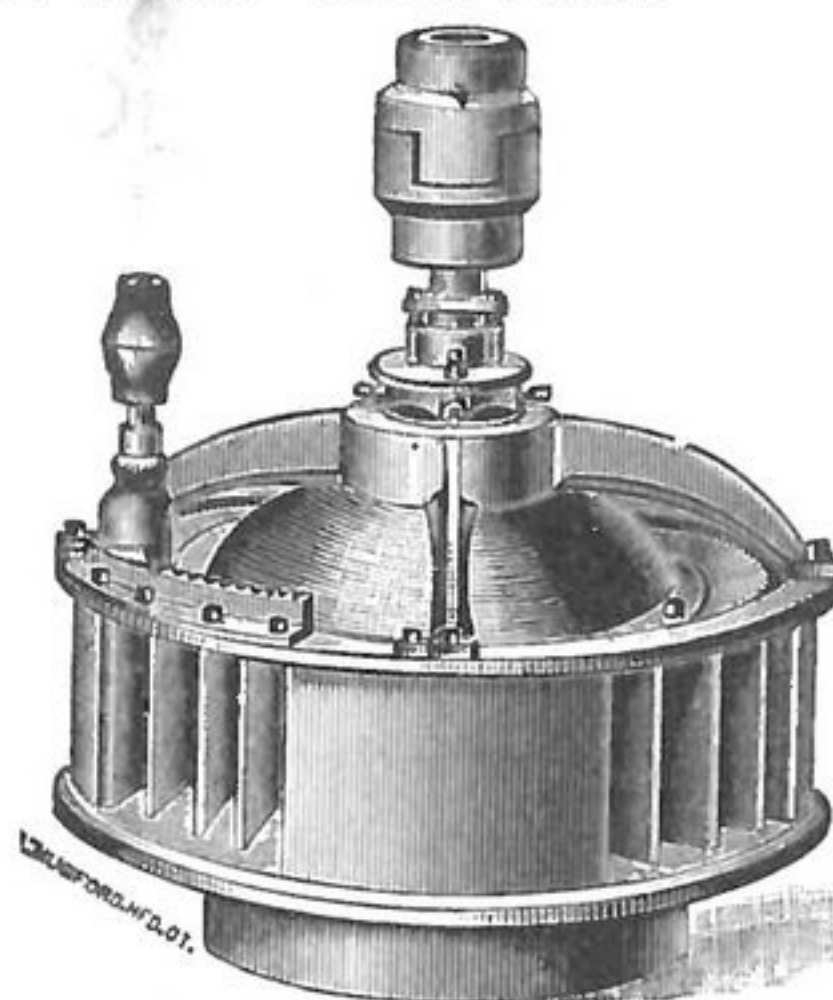
## VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS. (J. T. CASE'S PATENT.)

### FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:

"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & Co., Meriden, Conn.  
 "Superior to any mill in use."—GEO. WESTON, Bristol, Conn.  
 "The best satisfaction in quantity and quality."—CHILD'S ELEVATOR, Manchester, Ct.  
 "We take pleasure in recommending it."—GARLAND, LINCOLN & Co., Worcester, Mass.  
**SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.**

## The Improved National Turbine Water Wheel

The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.



**The Case Wheel & Mill Co., Bristol, Conn.**

# WE BUILD THE MOST EXTENSIVE —LINE OF— Flour AND Corn Meal Milling Machinery in America

SPENCER, IND., March 11th, 1889.

TO THE J. B. ALLFREE Co., Indianapolis, Ind.

Gents: We take pleasure in informing you that since we displaced rolls of other make and put in the "Keystone," we have had no trouble. Our flour is of a far better color and improved in quality, and our low grade is reduced to a minimum and we regret we did not put in your rolls years ago. We consider the adjustments perfect, so much so that they run as nearly like a rigid roll as it is possible for mechanical skill to make them. There is no vibration, consequently we have an even flour, which all millers know the value of. The evenness of feed is another feature that goes to make the "Keystone" what it is—a perfect roller mill. We are also well pleased with your system of separations; the flow sheet you furnished us works to a charm, making us a better flour and closer finish than we have ever been able to make before.

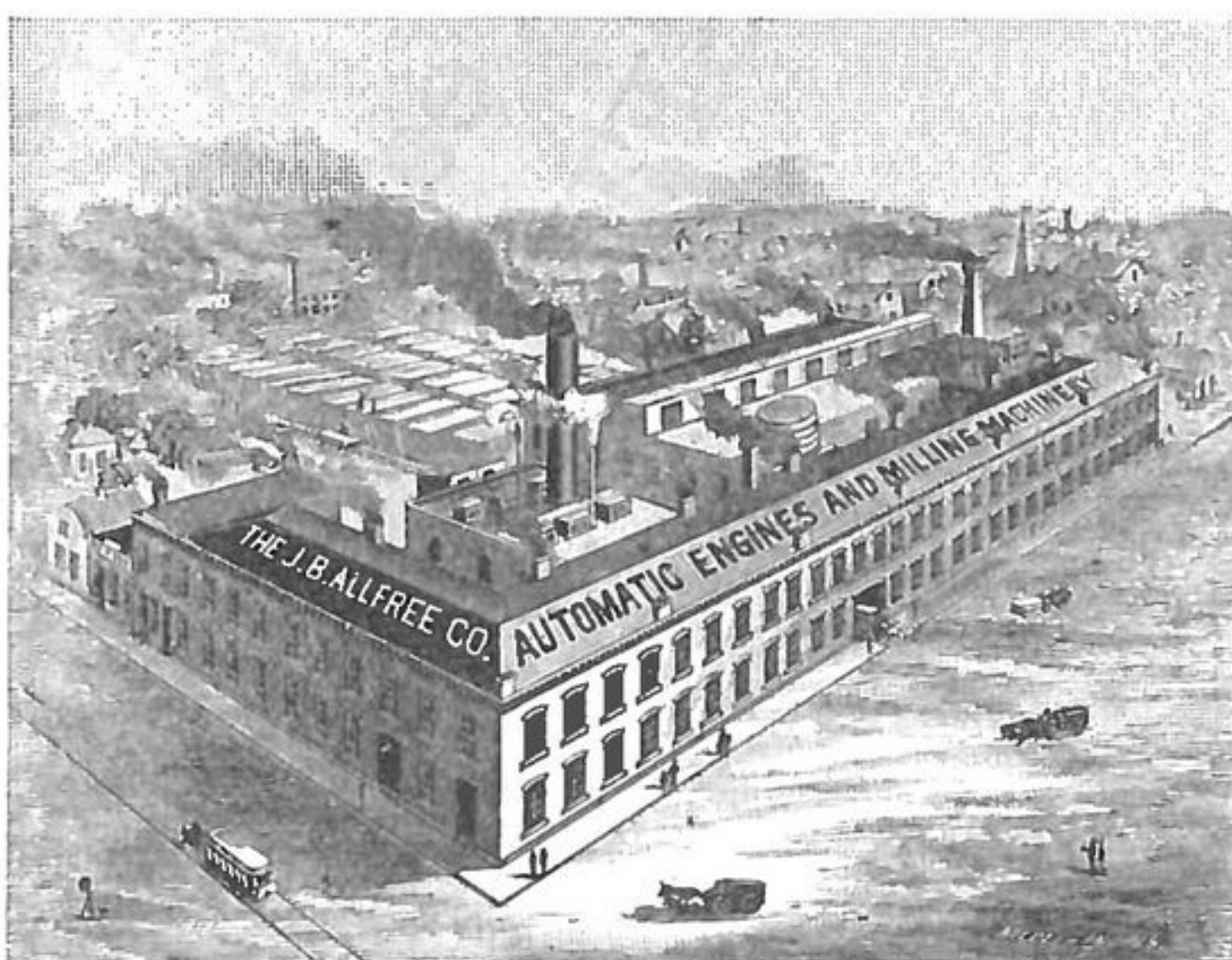
Yours truly, SPENCER MILL CO.

CENTRE POINT, IND., December 18, 1888.

THE J. B. ALLFREE Co., Indianapolis, Ind.

Gents: Your favor to hand and contents noted. In reply would say that the "Keystone" rolls work like a charm. They are easily adjusted and simple. As to your system we think there is no better.

Yours truly, L. C. KENEDY & CO.



MILLERSVILLE, IND., Jan. 28, 1888.

THE JAMES B. ALLFREE Co.

Gentlemen: Having now run my mills (constructed by you) some 18 months, I feel it my duty, as well as obligation, to give you my opinion as to your qualifications as mill builders. My idea of a well constructed mill is one that will yield a revenue to its owners, and one that will not do this is not worth the room the machinery takes up on the floor. You will understand I have no desire to find fault with other mill manufacturers' machinery, but I do know that I've at last found the kind that suits me. The rolls are perfection in my estimation, as well as your centrifugal reels, bolters, bran dusters, dust collectors, etc. In fact, the whole outfit has not cost me \$5 since standing, and we have been running almost 18 hours out of 24. The mill is about on the principle of a well constructed clock; all we have to do is to wind it up and let her go; every thing running light, smooth and easy. A 40-inch Leffel wheel under 7½ feet of water pulling the whole outfit, which has a capacity of 60 bbls. of flour in 24 hours. My flour is second to none in the country, having the competition of some of the best mills in the state to contend with; being within the sound of the whistle of the capital of the state, makes the competition greater than it would be farther away. The amount of low grade we make is small, running from 4 to 5 per cent. Should I ever have a desire to build another mill, in the absence of your firm or system, I would abandon the idea.

Respectfully yours, W. W. H. SPAHR.

## FLOUR MILLS. CORN MILLS. HOMINY MILLS.

Our machines are constructed of the best material and workmanship that can be procured.

Address for catalogue, etc.,

**The J. B. Allfree Co., Indianapolis, Ind.**



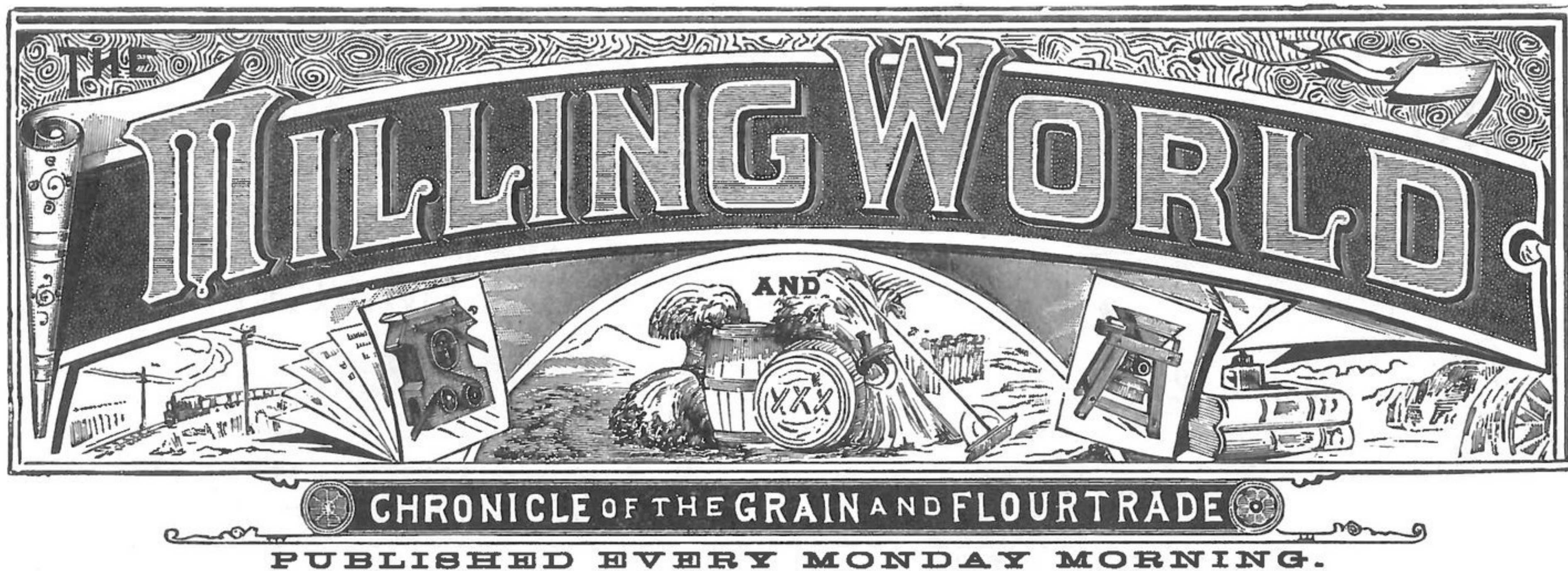
# CASE.

CASE MFG. CO., COLUMBUS, O.  
GENTLEMEN: If we were to build a hundred mills we  
would not permit any other than the "CASE" roll to  
enter them. They are the best roll on earth.  
Yours truly,  
W. C. MANSFIELD & CO.

W. C. MANSFIELD & CO.,  
MERCHANT MILLERS,  
CLEVELAND, TENN., AUG. 29, 1889.

# CASE.





VOL. XXI. No. 6.

BUFFALO, N. Y., OCTOBER 7, 1889.

\$1.50 PER YEAR.

THE way in which mills everywhere are changing to "short system" must make certain heads swim in a dazing manner. By the way, where are some of the "short system mills" that were to be "bankrupted within a year"? It is about time for a list of them to be compiled, so that the long-system hindsight may be shown to equal long-system foresight.

WE hear an occasional report of some state or territorial association of millers unanimously voting themselves in a body into membership in the National Association. If the process of voting in can be made to surpass the dropping out of members, probably in two or three centuries the National Association will have enough members to count or name in a published list. A "national" organization should not be a closed-door, dark-chamber, diminutive affair. It ought to make an effort to be as large as its name, at least.

PERPETUAL motion is a solved problem at last. It remained for a mill engineer to solve it, after so many others had failed. Here is the story, told in a Minneapolis dispatch dated October 1: "Richard Robillard, engineer at the Pillsbury mills, has invented a machine which he claims is a solution of the problem of perpetual motion. It requires no fuel and only a little oil. Robillard says the machine has been running seven weeks. He is engaged on a larger machine." Thus simply and briefly is the solution of the insolvable announced. Now let the Keely motor mote, and all will be well.

AN esteemed subscriber, a practical miller, sends us the following "signs of a hard winter," which he has gathered from the farmers who bring grain to his mill: 1. The husks on corn are unusually thick. 2. Apples, plums and other smooth-skinned fruits have unusually thick skins. 3. The "fuzz" on late peaches is unusually thick. 4. The "bloom" on late grapes is unusually abundant. 5. Hay is "wiry," and its seeds are covered more thickly than usual. 6. Wheat and rye straw is unusually tough. 7. Pea and bean pods are unusually thick. 8. Pumpkin skins are unusually hard, thick and glossy. If these "signs" are all reliable, and the farmers swear by them, the coming winter will be an ice-cream freezer of the most frigidly arctic description.

DURING the past few weeks we have received hundreds of letters from millers, who use roller-mills in their plants, asking us whether we can give them any positive information concerning their liability for infringement of the patents controlled by a Chicago concern. Last week we published statements by the Chicago concern and by one of the companies contesting the Chicago concern's claims. The Consolidated claim covers all the roller-mills of any consequence in the United States, but that claim has yet to pass the ordeal of the Supreme Court before it can be accepted as definitely established. The makers opposed claim that they do not expect to see it settled in favor of the Consolidated, and they propose to protect their customers in any event. As it looks now, the Supreme Court decision must be awaited to make or break the Consolidated claim.

ACCORDING to the Minneapolis and Chicago dispatches printed in another column, there seems to be a curious contradiction concerning the sale of the Minneapolis mills and elevators to European syndicatists. The owners persist in saying that they have not sold, while the agents of the syndicatists persist in saying that they have bought the Minneapolis properties, or have them in such shape that the purchase may be concluded at any moment. Time will show whose assertions are correct. It seems to be the general impression of those posted on the mill and elevator business that the British purchasers will have a good deal to learn in the management of the properties in question, in case they purchase, and that their knowledge will be rather expensive. Radical changes may be attempted, and all such changes would be attended with difficulties.

LATE Russian reports confirm the wheat shortage on the crop of 1889, but the same reports state that the large surplus of the crop of 1888 still on hand will enable Russia to export enough to keep down prices for Western Europe. The British millers are taking American wheat more freely. France and Germany both will need to import some wheat. Austro-Hungary will not export any and may need to import some. While the European wheat crop, on the whole, is not so far below the average in quantity as it was at first thought to be, it remains true that in quality there is a serious deficiency. Its milling value is decidedly below par. Much of the French and English wheat, at first reported to be of the highest grade, is found by the millers to be seriously deficient in quality and to demand the admixture of fine foreign grain to carry it into consumption. The American crop, on the other hand, is even more abundant and more excellent in quality than former reports made it.

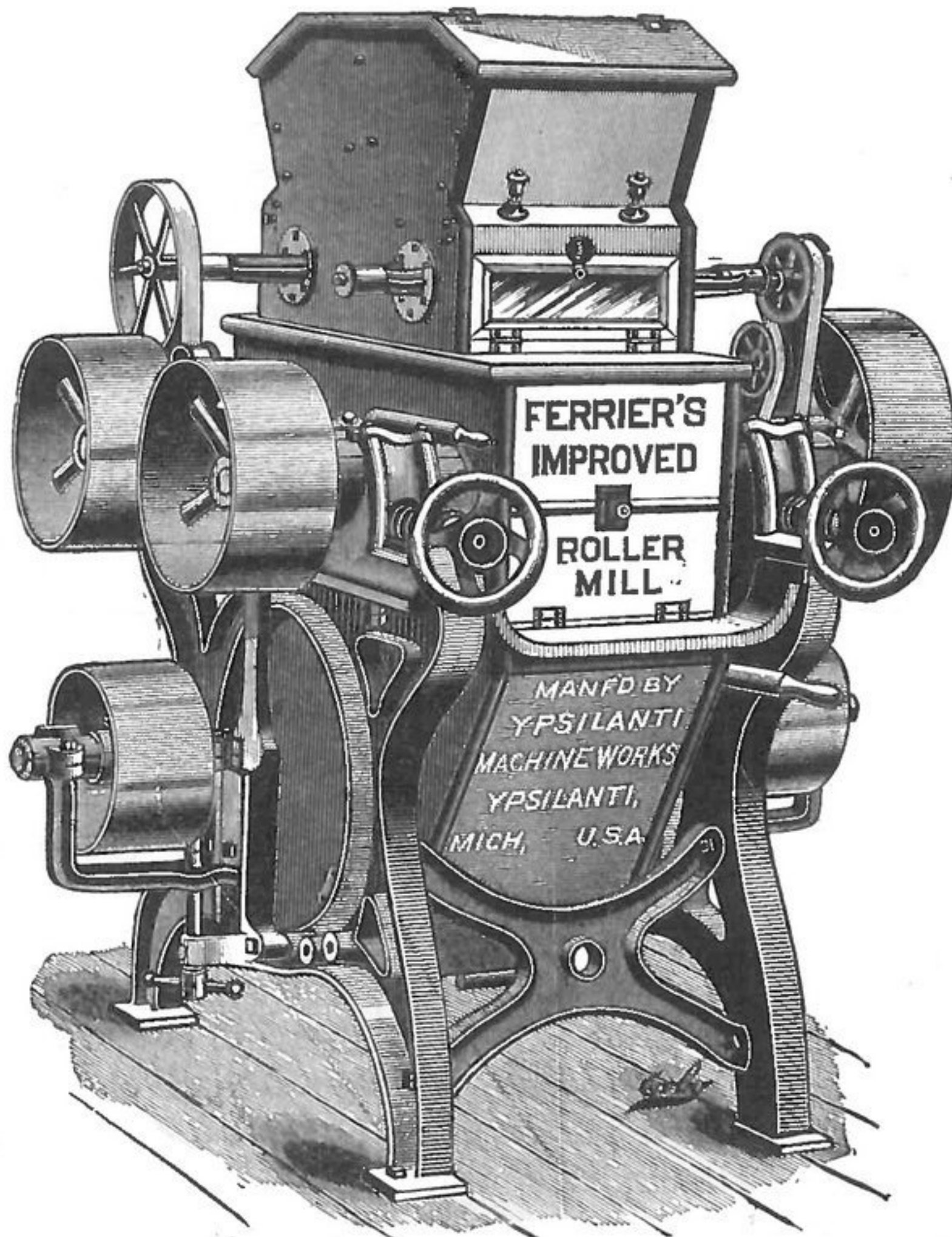
WE are not at all surprised that hundreds of our readers are calling for extra copies of THE MILLING WORLD of September 16, which issue contained the admirable paper on "Color of Wheat and Flour" read by F. A. Ashby at the Paris convention of the Association of British and Irish Millers in August. Many of our subscribers wish to know why such papers are not presented at the sessions of the American association, and that is a question which the managers alone can answer. There are millers, bakers, brokers and others in the United States who could prepare valuable and interesting papers on all subjects connected with the milling industry in its practical and scientific aspect, but the recent meetings of the National Association have not offered such men a chance to present such papers. Whenever a technical paper has been presented, it has found ready attention and thorough appreciation, excepting, possibly, in the case of a few importers or exporters, who treat flour as raw product for them to handle and who have no interest in making it. A half-dozen papers like Mr. Ashby's and Mr. Case's at the Paris convention would make the next convention of the National Association far more attractive to real millers than it has ever been since it became the sole possession of the brokers and speculators, the agents and exporters.



# YPSILANTI MACHINE WORKS, YPSILANTI, MICH. MILL BUILDERS

And Manufacturers of

## FLOUR MILL MACHINERY



Sizes of Ferrier's Improved Roller Mills.

|      |      |      |
|------|------|------|
| 6x12 | 6x15 | 6x20 |
| 9x15 | 9x18 | 9x24 |

NASHVILLE, TENN., MAY 8, 1889.

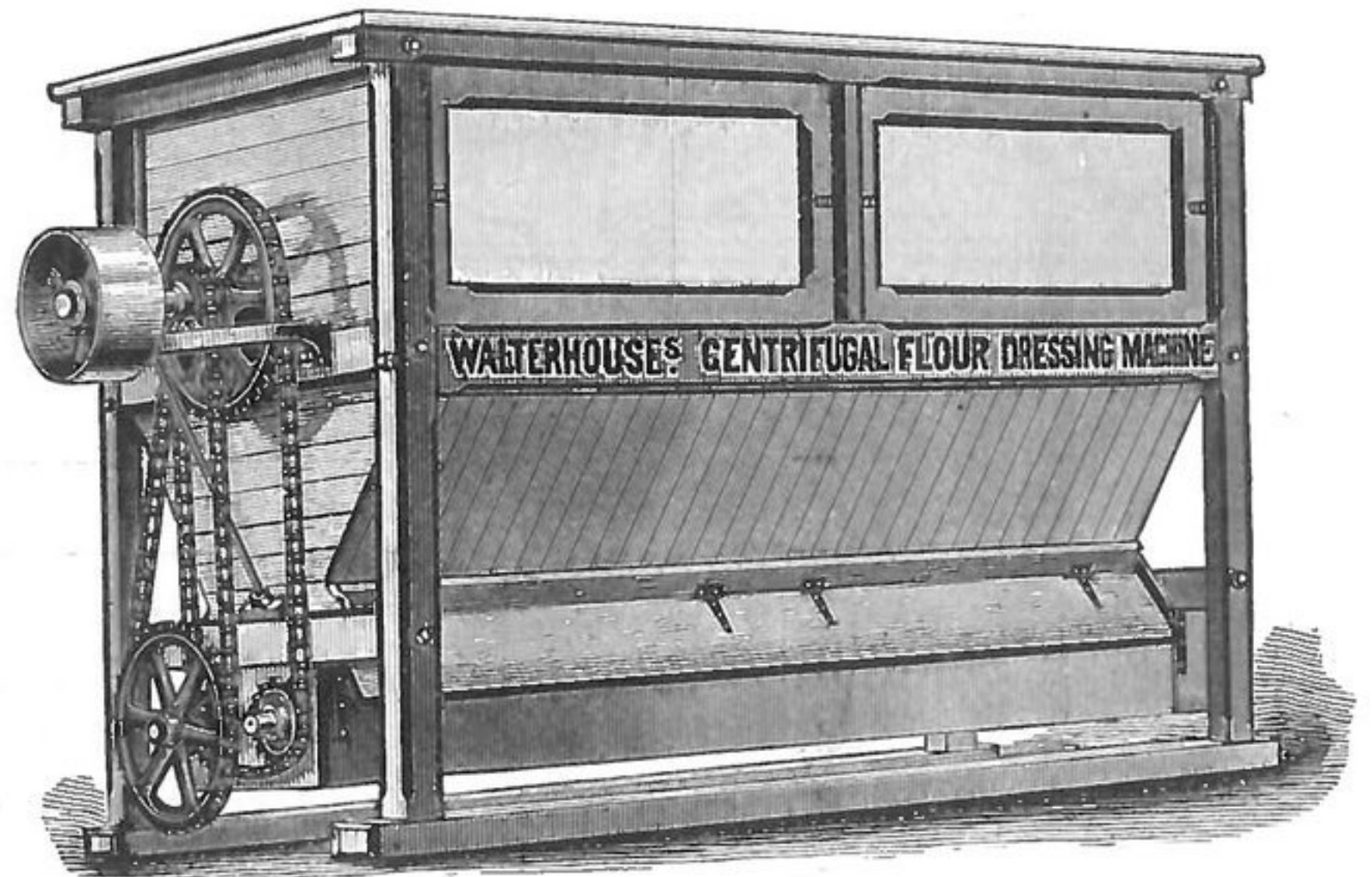
YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

*Gentlemen:* We have had a line of your "Roller Mills" in use for over two years, and they have given entire satisfaction in every respect. They work like a charm, and their ease of adjustment and solid structure, together with the excellent finish you give them, can but recommend your machines to the milling public.

Yours respectfully,

A. R. DICKINSON & CO.

Dealers in Bolting Cloth. Walterhouse's Centrifugal; Walterhouse's Slow-Running Flour Dresser with Inside Cylinder; Plain Round Reels; Scalpers, Bolting Screens, Etc., Etc., Etc.



JOHN ORFF, PROPRIETOR OF  
EMPIRE FLOURING MILLS.  
FORT WAYNE, IND., APRIL 10, 1889.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

*Gentlemen:* The Centrifugal Reel bought from you some time ago is doing its work complete in every respect. It does a large amount of work, and does it well. Should we make further changes in bolting, shall use more of them. Wishing you success, we remain,

Respectfully,

JOHN ORFF.

OFFICE OF LEXINGTON MILL CO.,  
LEXINGTON, MICH., JAN. 22, 1889.

TO YPSILANTI MACHINE WORKS.

*Gents:* In reply to yours of June 5th, would say that we are well pleased with our mill. It has more than met our expectations. Although it was feared that the six-inch rolls would not prove a success, we find them to be complete in every respect. We are making as fine a flour as there is made in the state, and we guarantee our patent to be equal to Minnesota Patent. The mill has given us no trouble whatever since we started it, and for plan and workmanship, your Mr. G. Walterhouse deserves great credit. If your friends doubt it would be pleased to have them come and see for themselves.

Yours respectfully,

LEXINGTON MILL CO.

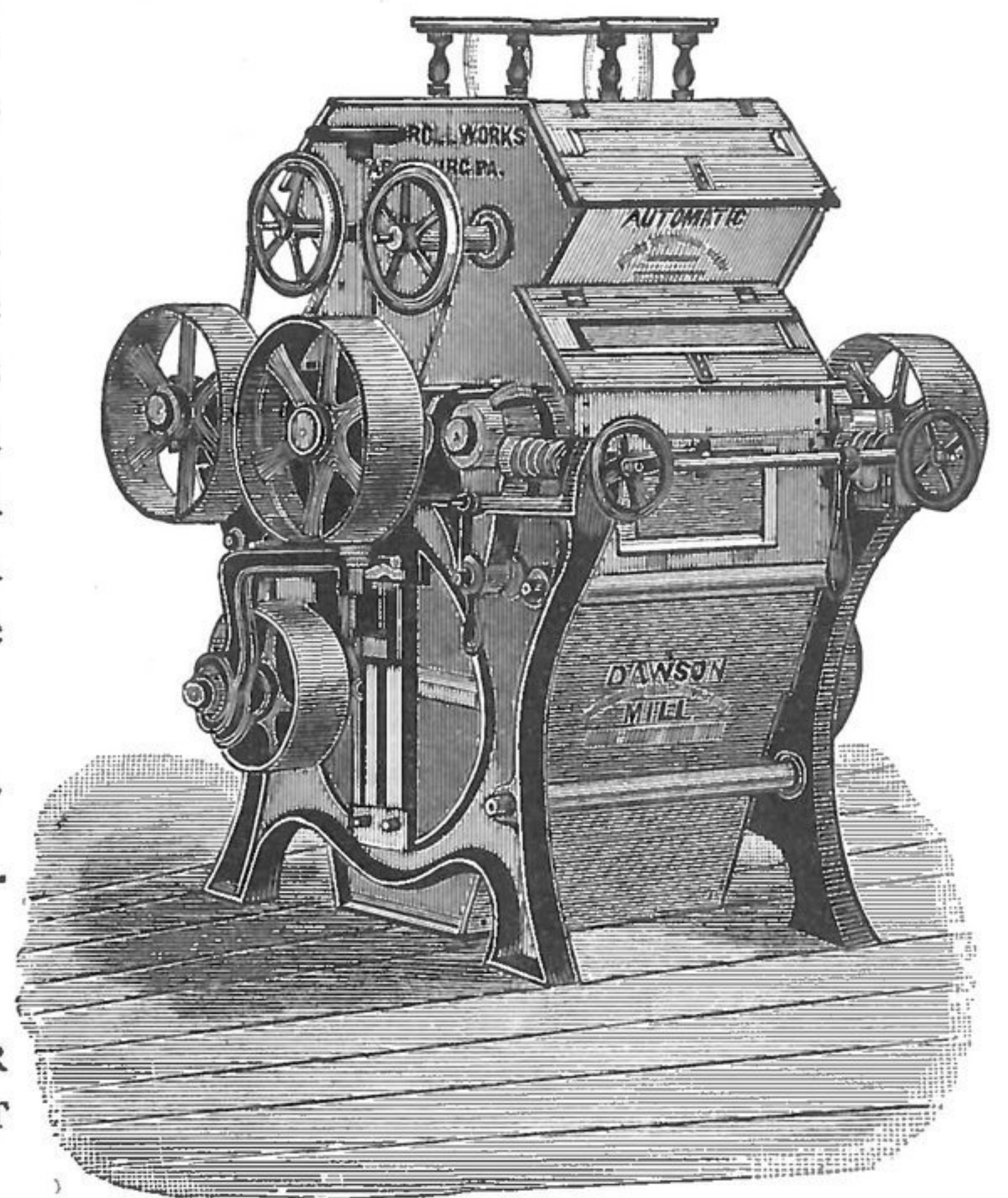
# Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

*We have a large plant to Re-grind and Re-Corrugate Rolls.*

Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.



FOR PRICE LISTS AND CIRCULARS, ADDRESS,

# Dawson Roll Works, Harrisburg, Pa.





PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,  
Over Bank of Attica.  
McFAUL & NOLAN, - - - PROPRIETORS.  
THOMAS MC FAUL. JAMES NOLAN.

#### SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in un-registered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

#### ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

#### EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

**THE MILLING WORLD,**  
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

#### SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

#### WANTED.

Western New York, Ohio and Pennsylvania mills in want of a temperate miller, with 20 years experience, should write to the undersigned, who is now running a first class mill, but would like to make a change this fall. Address, W., care of THE MILLING WORLD. 56

#### SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

#### FOR RENT.

Water power grist mill. Three run stone, fair order. Good opportunity. Require but little capital. Apply to M. D. OLNEY, Irvine, Warren County, Pa. 69

#### FOR RENT.

Clifton Mills, at Black Rock, Buffa'o, for rent on reasonable terms, recently repaired and put in good order. Apply to CHAS. DANIELS, over 311 Main Street, Buffalo, N. Y. 8tf

#### FOR SALE.

Several good second-hand and new turbines of various styles. Second-hand price list and descriptive matter and prices of our new machines sent free. Every one interested in the shortest route to successful milling on rolls or in grinding corn and feed with the least expense of power, should address us before buying.

FLENNIKEN TURBINE CO.,  
Dubuque, Iowa. 8tf

#### MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.  
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.  
One 14-Inch Vertical Feed Mill; best make, new, a bargain.  
One No. 6 Dustless Separator; new, a bargain.  
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.  
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.  
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.  
One No. 2 Purifier. New. Best make. A bargain.  
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

## M-I-L-L-E-R-S

Wanting Bolting Cloths should write for discounts on same before purchasing elsewhere to

**SAMUEL CAREY,**  
71 Broadway, New York.

CERTAIN esteemed subscribers will please bear in mind that these columns are not designed to be a channel of attack on any concern, however preposterous its claims may appear to be, and that is the reason why certain contributions have not been printed. The contributions would be spicy reading, but we believe that nothing is to be gained by stirring up bitter strifes. When the courts decide, the decision must be accepted, whichever side comes off victorious.

STATISTICS published by the daily newspapers are always open to the suspicion of error, and it is hardly allowable for class-journals to copy the errors made by the dailies in matters directly within the province of those class-journals. It is incredible that a well-informed authority on grain matters should copy from the dailies the statements that the exportable surplus of the present wheat crop of the United States is 200,000,000 bushels, and that the Canadian surplus is from 35,000,000 to 40,000,000 bushels. What is the matter with some of our cotemporaries? Have they been caught napping?

OFFICIAL figures of immigration continue to show a healthful and satisfactory decrease. During the first eight months of this year the total number of immigrants into the United States, exclusive of those from Mexico and Canada, was only 300,564, against 392,942 for the corresponding months of last year. This decrease of 92,378 is due to several causes: 1. There has been a fair improvement in business conditions in Great Britain, Germany and other European countries that furnish the majority of immigrants. 2. A strong assisting movement by the government of the Argentine Republic has turned a part of the tide away from the United States and towards South America. These causes sufficiently explain the decrease in immigration into the United States from Europe. No record is kept of Canadian immigration into the United States, but careful observers place it at 130,000 for this year. The Canadians are welcome, as they are thrifty, hardy, virtuous, industrious and progressive, but that can not be said of many of the European immigrants.

A DETROIT commission firm send out a monthly letter, presumably of a business nature, in which appears this remarkable passage: "When some 20,000 persons out of the 63,000,000 under this government have succeeded in possessing themselves of half the property of the country, people begin to reflect and ask themselves what the final outcome is to be. Wages of unskilled labor are much higher than in other countries, and the vast accumulations of millionaires daze the world, while the well-to-do middle class rapidly diminishes, occasionally one acquiring wealth, but the vast number dropping into the laboring class." It is not easy to understand just what bearing that quoted utterance can have on the commission business in Detroit. If it is meant to cast odium upon wealthy men, the authors should not forget that they themselves belong to a class generally considered odious, that of "middlemen," who grow rich by standing between the producer and the consumer, reducing the selling price to the former and increasing the buying price to the latter. Glass-house residents should not shy rocks around promiscuously. The statement quoted is ridiculous. No sane man believes, no man can prove, that 20,000 persons own half the property of the United States. The "well-to-do middle class" is not rapidly diminishing at all. It is rapidly increasing, and it is generally increased by additions from the "laboring class," by men who are industrious and frugal, who earn and save, and who place themselves above want. There are every year more laborers who own their homes and make savings-bank deposits, more men who engage in business, more men who in every occupation improve their conditions in every way in the United States. For every millionaire added to the list in this country there are thousands and thousands of men added to the well-to-do class. Millionaires are not dangerous persons. Laboring men are not despicable persons. Both are necessary. There is room for both in the United States, and we advise the Detroit middlemen to try a new tack on economic subjects in their next monthly effusion. Less flubdub would increase the value of such proclamations.



### WASHING WHEAT IN ENGLISH MILLS.

American millers, who begin to hear something about the washing of wheat before grinding, will be greatly interested in the following essay on wheat-washing, contributed by W. T. Bates, an English miller, to the London "Miller." He says: Among the questions appearing in this year's examination list is one referring to the changes which would be necessary in a mill fitted for hard dry wheat if it had to be suddenly adapted to damp soft wheat. It is a very practical question and touches closely on the British miller's real difficulties. Few but country millers understand what it is to mill soft native wheat alone after a damp harvest. True, familiarity with the difficulties breeds a sort of contempt for them, and they therefore treat it as a matter of course; but as their mills are specially fitted for this kind of wheat, it is questionable if, after all, their difficulties are so great as those of the town miller, who must at certain times make a transition from soft to hard and from dry to damp wheat as a result of our variable supply. One of the greatest factors in adding to our difficulties in this respect, and one of recent growth, is the necessity of washing certain kinds of wheat. I say necessity, for although it has been the custom and still is, in London and many other places, merely to damp this wheat, experience proves that, if the best results are to be obtained therefrom, washing is an absolute necessity. Being such a recent innovation, washing has scarcely received the attention it deserves. Originally only one object was sought, and that was to free the wheat from dirt, and with this accomplishment the first wheat-washers were satisfied. Later it was found that to be perfect a washer should not only cleanse the wheat from dirt, but from small stones also. Washing is a simple matter, as the dirt readily dissolves on coming in contact with water; and provided an arrangement is made for rinsing after leaving the water, the simplest and rudest appliance will avail. Not so, however, the stoning. Here is a real difficulty, and one which in practice can scarcely be overcome, on account of the great diversity in the weight and bulk of both wheat and stones.

A great deal of ingenuity has been exercised on this difficult problem, and many an inventor has had his hopes and sanguine expectations dashed to the ground when his pet invention has been tried in practice. Separation by gravity and suspension in water has been a favorite method; and provided the currents be kept perfectly under control, this is a very good plan and has been brought as near perfection as any. Another and probably the simplest, as well as the oldest, is that adopted in gold washing; the grain and stones (or dirt and gold) are made to flow with a current of water over a series of chambers or obstructions, the lighter wheat is carried forward, while the heavier stones are either dropped in the chambers, or backed up behind the obstructions, where they are removed by hand. This method has the advantage of simplicity and is cheap and fairly successful. Still another method is to drop the wheat and stones into the end of a bladed worm. The heavier stones slipping out at the bottom and the wheat being carried up by the worm, it makes a tolerable separator. This also is simple and cheap. All of these methods are good enough in their way, and each has some special feature to recommend it; but when we have thoroughly cleaned and stoned our wheat, a greater difficulty often presents itself, that of getting it again into condition for milling. It may be accepted as a safe rule that any wheat which is too damp to mill alone is also too damp for milling when mixed with other wheat; more especially if used immediately after mixing. We do certainly habitually mill damp soft wheat and make it into flour, but that does not alter the fact that it really is too damp for good and profitable milling, and that the operation is performed under difficulties. It is a mistake to suppose that very damp and very dry wheat will blend in milling. Nothing of the kind. Really such a diverse mixture should not be allowed to go into the mill, but it is done every day in almost every mill, and for a good reason, the dry wheat renders it possible to mill the damp, by counteraction, but for all that the damp wheat makes damp flour

and the dry wheat dry flour. They blend as flour in the sack, no doubt, but not otherwise. Clearly, the best work would be done by tempering both and producing a uniform medium by drying the damp wheat and damping the dry. The advantage of this would be manifest in the working of the mill and also in the finished products. The time-honored plan of allowing the diverse wheats to lie together for a considerable while is very good in its way, but hardly expeditious enough for this part of the nineteenth century.

We will suppose that this over-damp wheat is as nature left it and not the result of man's action; then, of course, it is unavoidable. But unfortunately we have to deal with that which comes under the latter category, that is, wheat which is too damp through our own acts; for in nine cases out of ten the wheat which we are compelled to wash absorbs too much moisture. In nearly every case it leaves the whizzer too damp and goes into the mill too damp; and despite the fact that it is smothered with other wheat it reveals itself unmistakably by lessening the yield, decreasing the output and causing a lot of trouble by heat and condensation. Of course there is the resource of artificial driers. These no doubt are all good enough in their way, but their application relates more particularly to wheat which is too damp from natural causes, and not to surface dampness alone, such as washed wheat has. I firmly believe that it is possible to wash Indian wheats at least and mill them within a few hours without the assistance of driers. I believe in preventing the wheat getting too damp rather than in attempting to cure after the mischief is done. Observation and experiment have convinced me that in most washers the wheat is kept too long in the water, when really a very short time only is necessary for most wheats. Next to this is the practice of keeping it too long wet before sending it to the whizzer, and also too much worming in the wet state. There can be no doubt that if the wheat could be dipped in water, just to soften the dirt, lifted out and rinsed with clean water and dropped at once into the whizzer, it would be clean and quite dry enough to grind alone within an hour or two. The mistake which has been and still is made is in worming it in its wet state. It stands to reason that, so long as the water is allowed to hang about the wheat, it is just as wet and absorbs just as freely as if it was in the water. Nay, more, for the action of the worm so abrades the outer skin that the water enters more freely. Besides, the abrasion makes it more difficult for the whizzer to shake off the moisture when it gets there. A general plan is to use an inclined draining-worm between the washer and whizzer, and this is just where the mistake occurs. I have seen illustrations of washing and draining machines in which the wheat must travel from 20 to 40 feet, mostly uphill, before it reaches the whizzer. No wonder there is a demand for driers with such an arrangement. If it was suggested to make a washer 30 feet long, people would laugh, and yet here it is. That this is a mistake is evident on the merest reflection. Keeping grain wet so long is a mistake, but rubbing it about in an inclined worm for an indefinite period is an even greater one. If it must be conveyed a distance before whizzing, why not use some other conveyor than a worm? In any case it should be moved as speedily as possible, as, until it has passed the whizzer, it is practically in the water.

These statements may appear strong and startling, but they are true, and any one who has a washing-machine can prove it. Washed wheat should have as smooth a skin as unwashed, if it is properly done. It will be so in machines of the right principle. The old-style cylindrical inside-worm-machines were quite right in this respect, but I fear they were sometimes a bit too long. The wheat from them would compare very favorably with that from some of the modern type, and there would certainly be less need for artificial driers with them, for whenever wheat is made ragged in washing artificial driers become a necessity. Double whizzing is a decided improvement in any case. When drying is necessary, it should be done at once, the object being to remove the moisture clinging to the outside of the grain rather than to drive it in, or to attempt to dry it out after it



has got inside. It is a fact that wheat is actually drier when it leaves the water than it is a few hours afterwards. This can be easily proved by putting a few grains in the mouth. When it leaves the washer the moisture is either on the outside of the skin or has only just penetrated within a portion of it; but after standing the moisture diffuses itself more generally through the outer layers and thus softens the grain. The outside assumes a dry appearance simply because the moisture has gone inwards. We can not handle the grain immediately after washing, on account of its inability to travel; but if it were not for this it would certainly mill better than it often does after standing for a considerable time. For this reason I am inclined to think that a strong current of cold air applied immediately after the wheat leaves the whizzer is as effectual as any thing. We all know how quickly washed linen dries in a strong wind, whether artificial or natural. If the wheat is not absolutely dry after such treatment, we know at least that it is much drier and that it will not only be in a fit condition for milling sooner, but also that there will be less moisture left for absorption.

It is claimed for driers that they temper the wheat, and this is, no doubt, the truth; but they do it by causing the grain to absorb the moisture rather than by evaporation; that is the first effect of the application of heat in any form; the pores are opened and the wheat sweats, and the drying must be continued for a considerable period before the wheat can be brought back to its normal state. I think, too, there is grave danger in heating certain kinds of glutinous wheat, as heat and moisture are the fundamental cause of the degradation of gluten; and when once degraded there is no possibility of recovering its lost virtue. To a certain extent damping this kind without subjecting to heat will also do great harm. Our latter-day refinement in meal and manners, unfortunately for the miller, necessitates the application of water to many kinds of wheat besides that from India, and to that, too, which we never imagined needed it for the purpose of cleaning a few years ago. We can not shut our eyes to the fact that "black earth" is present in too great abundance in nearly every sample of Russian and kindred wheat. Now our white-bread customers (benighted souls!) object to more than a fair share (one peck) of dirt, consequently we are under the unfortunate necessity of adopting the only available means of putting this matter—dirt—in the right place, for obviously it is decidedly matter in the wrong place when in our wheat and flour. I say the application of water to this kind of wheat is an unfortunate necessity, for in many cases it is positively and irreparably injured, especially in warm weather, by contact with water in any shape or form. But what are we to do? The Russian farmer is woefully careless; but even allowing for carelessness, it seems utterly incomprehensible how he gets such a lot of soil in his wheat. There is no cleaning machinery yet invented that can deal with this impurity. Water is the simplest and surest method, and with sound well-harvested wheat it does little or no harm; but if the wheat is not properly matured, and not properly harvested, and the presence of sprouted grains is strong evidence that it is not, the application of moisture will prove very disastrous, and the bread will be very faulty. This is the effect on glutinous wheats alone, and the effect is to render them something like English wheat after a bad harvest. In fact it causes a moistening of the gluten, from which a chemical change ensues, the gluten being dilated and rendered soluble or degraded.

The same effect is not evident in starchy wheat, as starch is insoluble and is not materially affected by moisture. Thus we can wash Indian or Egyptian wheats with impunity, and we know they are absolutely benefited thereby. Californian is another wheat which will stand moisture without serious change. It is, of course, not difficult to make any wheat too damp for good and profitable milling, and by so doing the miller suffers loss, as he would with any damp wheat, but what I wish to make plain is that the constituents of starchy wheat are practically unchangeable. Wet starch is just the same as dry starch, and in that respect

differs entirely from gluten, for wet gluten can never, I believe, be brought back to its original dry state. Being one of the fundamental elements in the fructation of the embryo, its mission is to change and to be changed. Thus the evil effect of the application of water is not confined to the gluten itself, but by chemical action it transforms the starch into another substance, thus doing far more than simple water could do on the starch alone. For this reason when the gluten of any wheat is faulty or immature, or when the wheat is grown, starchy wheat is the only kind which will neutralize the evil effect, and for this reason Indian wheats are especially useful to mix with English wheat in bad seasons; and so they would be with wheat which has been injured by water, I mean glutinous wheats; but perhaps dry Californian would be best of all for the purpose.

If water is used for softening dirt in this kind of wheat, as little as possible should be used, and that should be thrown off by a whizzer as quickly as possible before it has time to penetrate, which it does very quickly when the wheat is faulty. A tap on a worm about two or three feet long is quite sufficient, as that will allow time enough for the dirt to soften before the whizzer throws it off as dirty water. In all cases a whizzer is a great acquisition; they are simple, easily driven machines and are invaluable to the miller. If the wheat is merely damped and not washed or whizzed, the dirt must remain and, being softened by the water, forms mud, which adheres to the wheat and, when dry, is irremovable. I think it can not be disputed that washing and damping wheat, especially the very hard dry varieties, does improve the flavor of the resulting bread. At the same time this improved flavor is obtained at the expense of the lightness and loftiness of the loaf, for it is a result of the degradation of the gluten, which is the first process of change in the constituents of the wheat berry, whether it be in germination or fermentation.

I will refer to a matter in connection with wheat washing and damping which seems to have been overlooked in the past. We know, as a fact, that wheat can not be brought into contact with water without absorbing a certain quantity and thus adding to its weight. We also know that water is not and can not make flour; yet we are in the habit of speaking of and expecting certain percentages of flour from wheat of this kind. The proper way to calculate the flour result is to weigh the wheat before damping and let it go into the mill, and calculate the results on the dry wheat basis. Even then it would not be safe to calculate otherwise than on the wheat and flour basis. Were we to do it by adding offals and flour together, we should get a far too large proportion of the former; for we know that most of the absorbed moisture is there, and even that which has actually touched the flour will not add to its percentage, but rather detract from it by making it more difficult to separate from the offals. I have seen Indian wheat, which in its dry state contained 8 per cent. of moisture, which after washing and drying contained 14 per cent. No doubt this quantity is excessive and was a result of too long immersion or too much abrasion. But if dried wheat gained 6 per cent., what would be the gain when it is merely washed and not dried, especially with such a washer? If, then, there is a gain of 5 per cent. only, it means that for every 100 sacks of wheat sent into the mill there are only 95 sacks really of wheat and 5 of water. It becomes then a matter of calculation of how much wheat we have in reckoning how much flour we ought to get. It is practically the same with dirt. If we remove 5 per cent. of dirt, we have only 95 parts of wheat wherewith to make flour. It is usual in washing to make the gain cover the loss. Thus, if we remove 5 parts of dirt and rubbish and add 5 parts of water, we are practically where we were, we have no more flour-making material than the 95 parts, but we have that which will add to the offals, but not to its full extent, as a fair proportion will be lost by evaporation in the mill.

And what a lot of trouble that evaporated moisture causes, to be sure! If we could only keep the temperature of every thing up to that at which this moisture is emitted, we should possibly avoid condensation, and so clammy spouts and



fungous growths; but that is one of the problems yet to be solved. Moisture? Why, I heard of a mill where buckets had to be kept under the sixth-break rolls for the purpose of catching it, so freely was it emitted and condensed; and when such a state of affairs exists we need not pry farther, for we know the inevitable. The only thing that I know which runs damp wheat a close race in the above respect is garlic. Those who have had no experience with this little pest have something to learn. Let them, unconsciously, have a cargo of wheat well spiced with garlic put upon their rolls, and I warrant that within 24 hours they will find a state of affairs which will throw damp wheat completely in the shade.

#### DISPUTED NORTHWESTERN MILL SALES.

Concerning the report of the sale of Minneapolis flour-mills to European syndicatists a dispatch of September 29 from Minneapolis says: C. A. Pillsbury was seen last night regarding the report that British capitalists, acting through an agent in Chicago, had purchased the Pillsbury mills here. He declared that he had never heard of Mr. Mayer, the alleged Chicago agent, and that there was nothing in the story. The mills would, of course, be sold, provided he could get his price. "My private opinion," he added, "is that the Van Dusen elevators are sold, to whom I don't know. I know there was an option on the Washburn mills, but I think it would take a good deal more money to get them now. Mr. Mayer may represent parties who have money enough to carry the deal through. All I can say is that the Pillsbury mills are not sold." S. D. Cargill, of the Cargill system of elevators, refused to speak or be seen. Charles M. Harrington, local manager of the Van Dusen and Star elevator systems, denied that there was any truth in the report of the sale of the Van Dusen and Star systems.

Another dispatch from Chicago, dated September 30, says: Levy Mayer, of this city, on whose authority the statement was made public on Sunday that no English syndicate had purchased large milling and elevator properties in the Northwest, said to-day: "My information is that the original contracts for the sale of the Pillsbury and the Washburn mills expired on August 1 and were renewed for a period of 60 to 90 days. Governor Pillsbury was in London in August, while I was there, for the purpose, it is said, of aiding in the sale. I believe that ex-Governor Washburn was also there. The contracts for the sale of these mills expire in a few days. The indications, I am led to believe, point to the sale going through; but, of course, until sales of that magnitude are accomplished, no positive statement can be made. Mr. Mayer was asked regarding that part of the dispatch referring to the Van Dusen and Star elevator systems. Picking up the dispatch, Mr. Mayer read as follows: "Charles M. Harrington, local manager of the Van Dusen and Star elevator systems, denied that there was any truth in the report of the sale of these systems." Commenting on this statement, Mr. Mayer said: "I strongly suspect that the Minneapolis reporter did not interview the genuine Harrington. If he had, and Mr. Harrington had spoken at all, he would have said that a contract for the sale of the Van Dusen and Star systems had been made; that, in fact, Mr. Harrington, as secretary of one of the companies, had attached his signature to that contract, that the contract had been delivered to me, and that a portion of the purchase price had already been paid into one of the Chicago banks."

#### POINTS IN MILLING.

GRADING middlings for purification is an absolute necessity. When the sizes of middlings are irregular, the air-currents can not properly treat the stock. Furthermore, in irregular material the movement over rolls and silks will not be all that may be desired. Any flour-maker, who will pause for a moment to think on the point, will readily understand the force in this suggestion on grading material for treatment, whether it be grain or middlings.

EUROPEAN ideas of wheats may be gathered from the following statement of characteristics of various sorts given in

an English cotemporary, the grains mentioned being in large use in British mills: Kubanka has the reputation of being the strongest of European wheats. It is characterized by a sharp, angular, somewhat long form; clear and thin-skinned, very hard, and difficult to reduce with rolls, but makes splendid semolina and middlings. It produces a very high loaf of bread of a rich, or yellowish hue, the flavor of which is good. The flour is a pure yellow; its value is indicated by its market price. English Rivetts is one of the poorest English varieties. In form it is large and plump; the skin is thick and rough and in milling disintegrates very badly. The flour has a very distinctive appearance, being in taste, smell and feel very much like rice flour; indeed, in many cases it is used instead of rice flour. It is short of gluten, and for that reason it is often used for biscuit making. Californian is a fine white wheat; the berries are rather large and plump; the skin is dense. It is characterized by great dryness and heavy weight. Bread made from it is of good color, but weak and deficient in flavor. Walla Walla is similar to Californian, but the flour therefrom has a peculiar and distinctive yellow color; this is its chief characteristic. Chilian is a white weak wheat. The berries are plump and handsome and fairly heavy; the flour is very white, but the bread is without character. Odessa Ghirka, a red variety, and when sound and in good condition is a strong useful wheat; the berries are long and often somewhat shrunken; some kinds are round and plump, resembling spring American, and then it is very heavy. Loaf high and of fair color; flavor fair. Azima is a good variety of winter wheat; in appearance not unlike Ghirka, except that the grains have a cleaner appearance. It is softer and generally makes better-colored flour than Ghirka, scarcely as strong, but better flavor. No. 1 Bombay is a fine white wheat. The grains are large and smooth-skinned, and being very dry is a heavy wheat. Flour very white but weak and flavorless. Australian is a fine white wheat, probably the best white wheat in the world. In appearance not unlike the foregoing; it is very dry and heavy. Flour has a rich hue. Loaf high, good color and excellent flavor. New Zealand is also a fine white wheat, resembling the best varieties of English; the grains are generally plump and white; makes a good loaf, having fair strength, good color and very good flavor.

It may be asked why the classification is not extended to include the finest American wheats, and particularly the fine hard springs. The reason is probably that those wheats are not ground separately in British mill to any great extent. They are used by the British millers chiefly to make it possible to grind the inferior European and Asiatic wheats which are thrust upon them for use. The fine hard American wheats are mixed with these poorer grains to aid them through the mills and onto the markets. It would be interesting to read a British summary of the bread made from the highest grades of American fine flour.

WHEAT running over 60 pounds to the bushel is far more valuable for flour-making than that running under 60 pounds. Ordinarily, the heavier the wheat, the greater will be the yield percentage.

WHAT has become of the 4:10, the 4:12 and the 4:20 men of last year? It is almost an age since we have been startled by the announcement that this or that miller, in this or that mill, has "made a barrel of flour of 4 bushels of wheat." The fine quantity of the new crop ought to encourage some miller to announce that he has succeeded in getting out of a given quantity of grain something that was never in it.

THE food faddists die hard. In fact, they do not seem to die at all. According to the London "Millers' Gazette," at a recent meeting of the Bread and Food Reform League in London, a clergyman, Professor Henslow, an able chemist, explained that the outer skin or cuticle of the wheat is practically useless as a food and difficult to digest, unless reduced to a powder; but the inner coverings were just those which contained the nitrogenous compounds so neces-



sary in food, and which the starchy portion of the berry was entirely deficient of. The miller of the present day, he said, rejected those very portions of the wheat which were most nutritious and most necessary for the human frame, the albuminoids. There are three products from the wheat, the superfine white flour, which is the least valuable as a food, but which realized the best price; the second quality, or households, which is better than the superfine, and the bran, or cover, which is the best of all, if it can be made so as to be easily digested. The League recommended the whole meal to be reduced to a sufficient fineness to pass through a No. 18 wire. He impressed upon his hearers the necessity of feeding young children on nitrogenous foods and warned them against the use of starchy foods, such as rice, tapioca and sago. Lentils, he said, contain the most nitrogen of any food. The germ of the wheat berry, which he said millers reject, is a most nutritious substance, as had been proved by Prof. Church, and it is a mistake to reject it. Referring to the various food preparations which were now offered to the public, Prof. Henslow said that these are a proof that the desire to have food containing a proper amount of nitrogen or albuminoids is spreading. The frame food which was exhibited in the Hall seemed to be, he said, the nearest approach to the ideal food recommended by the League, judging by Dr. Frankland's analysis, which he had no reason to doubt. In this food the bran is freed from the fiber which is so indigestible and reduced to a powder or extract, which is mixed with the white flour in the making of bread. Prof. Henslow finally exhorted his hearers to spread among the poor the great advantages to be derived from eating bread which contains the phosphates present in the bran, and hoped that bakers would not, as they generally have done, charge more for whole-meal bread than for white bread. He pointed out, too, that hundreds of bakers now sold hygienic bread who previously only sold white, so that there was no doubt the demand was spreading.

COMMENTING on this lecture, the London journal quoted from says: From all this millers will probably find it suggested that they should turn their attention to the manufacture of granular wheat meal as a special product, eliminating the outer bran as far as possible. An improvement in the manufacture of the meal, and especially in the making of the bread, would, we believe, do much towards extending its use. But, laudable as are the efforts of the Food and Bread Reform League, it is evident that the national taste runs and will continue to run in the direction of pure white bread.

#### COTEMPORARY COMMENT.

Recently a St. Louis miller purchased 3,000 bushels of wheat which was grown inside the city limits and averaged 42 bushels to the acre. Now let us hear no more about the grain crop of Chicago being marketed in St. Louis.—*Chicago "American Elevator."*

An Italian engineer recently announced the discovery that sugar is an efficient means of preventing boiler incrustations. This is acknowledged by American engineers, who also claim that it will dissolve as much iron as scale, and that after a short time there would be but little boiler left. Great difficulty has been experienced in carrying sugar in iron ships on account of the rapid corrosion. The iron parts of sugar working machinery are rapidly dissolved. A very small quantity of sugar will deeply corrode iron.—*New York "Mechanical News."*

#### HORSE SENSE ABOUT SELLING WHEAT.

Referring to the incessant palaver about the necessity of sending unmixd Minnesota and Dakota wheat to Europe, a Minneapolis market journal improves the opportunity to make the following sensible utterance: "If the people in the United Kingdom wanted pure wheat and would pay more for it in proportion than they would pay for the mixed article, commercial people would soon find it out and the wheat would go pure. But for Englishmen, Irishmen, Scotchmen or any other men to insist that Americans shall

ship them pure wheat when they will not pay for it so much as dealers in the mixture will pay, they are asking us to gratify their pure palates at our own expense. Do our city editors perched in their farm chair suppose mixers of the pure wheat of the farm with the impure wheat of commerce are swindling farmers or injuring trade? They don't hurt the farmer, for they pay him more for his wheat than the pure fellows will pay, or they would not get it. If the mixer could sell it for more separate, he would sell it separate. If a New York mixer pays us 90 cents for our wheat and mixes it with Illinois wheat that cost 60 cents, when the pure exporter would pay us 85 cents for our wheat, how are we injured or what reason has the foreigner to complain? He can not expect to satisfy his lofty craving for pure bread at a cheap price. If he will pay for the pure article he'll get all he wants."

#### THE GRAIN TRADE OF BUFFALO.

The eastward movement of flour and grain from the west through Buffalo for the month of September, 1889, shows a decrease of 78,945 barrels in the receipts of flour and an increase of 2,668,706 bushels in the receipts of grain, estimating flour as wheat, compared with the same month last year. The following table shows the imports of flour and grain into Buffalo, by lake, for the month of September, and from the opening of navigation to September 30th, 1889, compared with those for previous years:

| FOR THE MONTH OF SEPTEMBER.   |              |            |                        |
|-------------------------------|--------------|------------|------------------------|
|                               | Flour, bbls. | Grain, bu. | Grain, inc. Flour, bu. |
| 1889.....                     | 676,702      | 15,257,359 | 18,640,869             |
| 1888.....                     | 755,647      | 12,693,928 | 15,972,163             |
| 1887.....                     | 505,565      | 11,229,292 | 13,757,177             |
| 1886.....                     | 661,018      | 10,835,702 | 14,140,792             |
| 1885.....                     | 424,421      | 8,748,328  | 10,870,433             |
| 1884.....                     | 371,501      | 11,220,896 | 13,078,401             |
| 1883.....                     | 246,863      | 12,945,801 | 14,180,116             |
| FROM OPENING TO SEPTEMBER 30. |              |            |                        |
|                               | Flour, bbls. | Grain, bu. | Grain, inc. Flour, bu. |
| 1889.....                     | 2,956,343    | 62,509,670 | 77,291,385             |
| 1888.....                     | 3,302,248    | 55,221,034 | 71,732,274             |
| 1887.....                     | 2,739,493    | 60,746,740 | 74,444,205             |
| 1886.....                     | 3,166,703    | 53,427,169 | 69,010,684             |
| 1885.....                     | 1,666,879    | 37,214,208 | 45,248,603             |
| 1884.....                     | 1,667,302    | 37,606,439 | 45,942,944             |
| 1883.....                     | 1,508,154    | 48,657,469 | 56,198,419             |

THE preliminary official estimate of the wheat crop of France this year compares with last years figures as follows:

|                         | 1889.       | 1888.       |
|-------------------------|-------------|-------------|
| Area, hectoliters.....  | 7,160,026   | 6,978,134   |
| Yield, hectoliters..... | 111,460,218 | 98,740,728  |
| Equal acres.....        | 17,713,140  | 17,243,667  |
| Equal bushels.....      | 316,268,300 | 280,176,800 |

THE Minneapolis spoiled child screams that he will not play with some one. How perfectly sad! What a wild waste his refusal makes of the round earth to about ten esteemed cotemporaries! How dreadful!

G. W. Robertson, Yorkville, Tenn., has points on a flour-mill to be built there.

#### SPECIAL NOTICES.

##### BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,  
Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

#### TOLEDO MILL PICKS AND STONE TOOL MFG. CO.

Manufacturer  and Dresser of

#### MILL PICKS.

Made of the best double-refined English cast steel. All work guaranteed. For terms and warranty, address, GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, Ohio. Send for Circular.  
N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

Shafting, Pulleys, Hangers, Coupling, Machine and Jobbing, Etc., Etc.





**A NEW FORM OF FUEL.**—An Indiana man grinds corn-stalks and coarse prairie grass, moistens them with water, reduces them to a coarse pulp and then subjects the mass to a heavy pressure, compressing them into blocks 12x4 and 4 inches thick. These, when thoroughly dry, furnish more heat than ordinary bituminous coal.

## GENERAL NOTES.

A RUSSIAN paper notes the termination of a lawsuit begun in 1490, or four centuries ago. The litigation was over a 40-acre tract of uncultivated land, has been handed down through numberless generations, and curiously enough has been finally settled by peaceful arbitration.

THE largest animal known is the rorqual, which is about 100 feet in length. The smallest is the twilight monad, whose dimensions are  $\frac{1}{12000}$  of an inch. It is evident that the middle term is one-third of an inch, about the length of the common house-fly, which may, therefore, be considered as an animal of medium size in the creation.

### THE RAILROADS OF THE UNITED STATES.

FOLLOWING is an abstract of the advance sheets of "Poor's Manual" of railroads for 1888, which is now in press:

#### GENERAL EXHIBIT FOR FISCAL YEAR.

|  | Miles.          |
|--|-----------------|
| Length of track laid up to Dec. 31, 1888.....  | 156,081.52      |
| Of which were completed up to the close of the fiscal years of the respective companies.....                         | 154,275.81      |
| Completed since close of their fiscal years.....   | 1,805.71        |
| Increase of mileage in the calendar year 1888 (4.7 p. c.).....   | 7,028.15        |
| Increase of mileage in the fiscal year 1888 (4.2 p. c.).....   | 6,277.21        |
| Liabilities and assets of the companies owning the above 154,275.81 miles of line:                                   |                 |
| <b>LIABILITIES.</b>  |                 |
| Capital stock.....   | \$4,438,411,342 |
| Funded debt.....   | 4,624,035,023   |
| Unfunded debt.....   | 306,952,589     |
| Current debt.....  | 238,088,355     |
| Total liabilities.....   | \$9,607,487,309 |
| <b>ASSETS.</b>   |                 |
| Cost railroad and equipment.....   | \$8,344,304,820 |
| Real estate, stocks, bonds and other investments.....  | 1,106,232,499   |
| Cash, bills receivable, current accounts, etc., etc.....   | 423,433,053     |
| Total assets.....  | \$9,873,970,372 |
| Excess of assets over liabilities.....   | \$266,483,063   |
| Excess of assets in various states.....  | \$386,139,014   |
| Excess of liabilities in various states.....   | 119,655,951     |
| Total mileage of railroads completed at close of fiscal years  | Miles.          |
| Of which full statistics of operations were received from..  | 154,275.81      |
| Mileage of roads not reporting earnings, etc., consisting chiefly of new roads not yet brought into full operation.. | 145,341.24      |
| Miles operated.....  | 8,934.57        |
| Passenger train mileage.....   | 145,341.25      |
| Freight train mileage.....   | 200,125,345     |
| Mixed train mileage.....   | 410,514,115     |
| Total train mileage.....   | 10,111,911      |
| Passengers carried.....  | 688,751,371     |
| Passengers—mileage.....  | 451,353,655     |
| Tons moved.....  | 11,190,613,679  |
| Tons one mile.....   | 589,398,317     |
| Earnings—Passengers.....   | 70,423,005,988  |
| Freight.....   | \$251,356,167   |
| Other.....   | 639,200,723     |
| Total.....   | 60,065,118      |
| Operating expenses.....  | \$950,622,008   |
| Net earnings.....  | 653,258,331     |
| Other receipts, including rentals received by lesser companies.....  | \$297,363,677   |
| Total available revenue.....   | +84,897,880     |
| Payment from available revenue:  | \$382,261,557   |
| Interest on bonds.....   |                 |
| Other interest.....  | \$199,062,531   |
| Dividends.....   | 6,217,521       |
|  | 78,943,041      |

|                    |            |
|--------------------|------------|
| Rental.....        | 45,289,721 |
| Miscellaneous..... | 38,040,733 |

|  |               |
|--|---------------|
| Total.....   | \$367,553,547 |
| Balance—Excess of available revenue over actual payments therefrom for the year..... | \$14,708,010  |

The total number of miles of railroad in the United States at the close of 1888 was 156,082, of which 7,028 miles were constructed during the year, the rate of increase being 4.7 per cent. The mileage of lines making returns of their share capital and funded and floating debts equaled 154,276, against 147,999 for 1887, the increase being 6,277, the rate of increase being 4.24 per cent. The share capital of the mileage completed at the end of 1888 equaled \$4,438,411,342, against \$4,191,562,029 in 1887, the increase equaling \$246,849,313, the rate of increase being about 5.9 per cent. The funded debts of all the lines at the close of the year aggregated \$4,624,035,023, a sum \$437,091,907 in excess of the total of 1887 (\$4,186,943,116), an increase of nearly 9.5 per cent. The other forms of indebtedness of the several companies at the close of the year equaled \$306,952,589, against \$294,682,071 for 1887, the increase being \$12,270,518. The total share capital and indebtedness of all kinds of all the roads making returns equaled at the close of the year \$9,369,398,954, an increase in the year of \$696,211,738 over the total of 1887 (\$8,673,187,261), the rate of increase for the year being about 8 per cent. The cost per mile of all the roads making return as measured by the amount of their stocks and indebtedness equaled very nearly \$60,732, against \$58,603 for 1887. The gross earnings or receipts of all the lines, including elevated railroads, from which returns were received for the year, equaled \$960,256,270, of which \$251,356,167 were received from transportation of passengers, \$639,200,723 from transportation of freight, and \$69,699,380 from the transportation of mails and express matter, profits of leased lines and other miscellaneous sources of revenue. In the latter sum are included the gross earnings of elevated railroads. The gross earnings of all the lines for the year ending December 31, 1887, equaled \$940,150,702; the increase for the year 1888 equaling \$20,105,568, or 2.14 per cent. The earnings in 1887 from transportation of passengers equaled \$240,542,876; from freight \$636,666,223; from transportation of mails and express matter \$62,941,603, against \$69,699,380 for 1888. The earnings per mile from which full returns were received in 1888 equaled \$6,540, against \$6,861 for 1888, the decrease equaling \$321 per mile. The net earnings of all the lines for 1888 equaled \$301,631,051, against \$334,989,119 for 1887, the falling off equaling \$33,358,068, the rate of decrease being about 10 per cent. The amount of interest paid in 1888 equaled \$207,124,288, against \$203,790,352 in 1887, the increase being \$3,333,936, the rate of increase equaling more than 1.63 per cent. The amount paid in dividends in 1888 equaled \$80,243,041, against \$91,573,458 in 1887, the falling off equaling \$11,330,417, the rate of decrease being about 12.4 per cent. The number of persons transported in 1888 by all the lines was 451,353,655, against 428,225,213 for 1887, the increase for the year being 23,128,142, the rate of increase equaling 5.4 per cent. The number of passengers carried one mile in 1888 equaled 11,190,613,679, against 10,570,306,710 for 1887, the increase equaling 620,306,969 persons carried one mile, the rate of increase equaling very nearly 6 per cent. The distance traveled by each passenger in 1888 equaled 24.78 miles; in 1887 it was 24.68 miles. The amount received per passenger per mile equaled 2.246 cents in 1888, against 2.276 cents in 1887. Had the passenger rates for 1887 been maintained for 1888, the earnings from this source would have equaled \$255,034,086, a sum \$14,491,210 greater than that received. The number of tons of freight transported on our railroads in 1888 equaled 589,398,317, against 552,074,752 tons in 1887, the increase equaling 37,323,565 tons, the rate of increase being about 6½ per cent. The value of the tonnage moved in 1888, estimating its value at \$25 the ton, equaled \$14,633,957,925. The number of tons transported one mile in 1888 equaled 70,423,005,988, against 61,561,069,996 tons moved one mile in 1887, the increase of service performed for the year equaling 8,861,935,992 tons moved one mile, the rate of increase being about 14.4 per cent.



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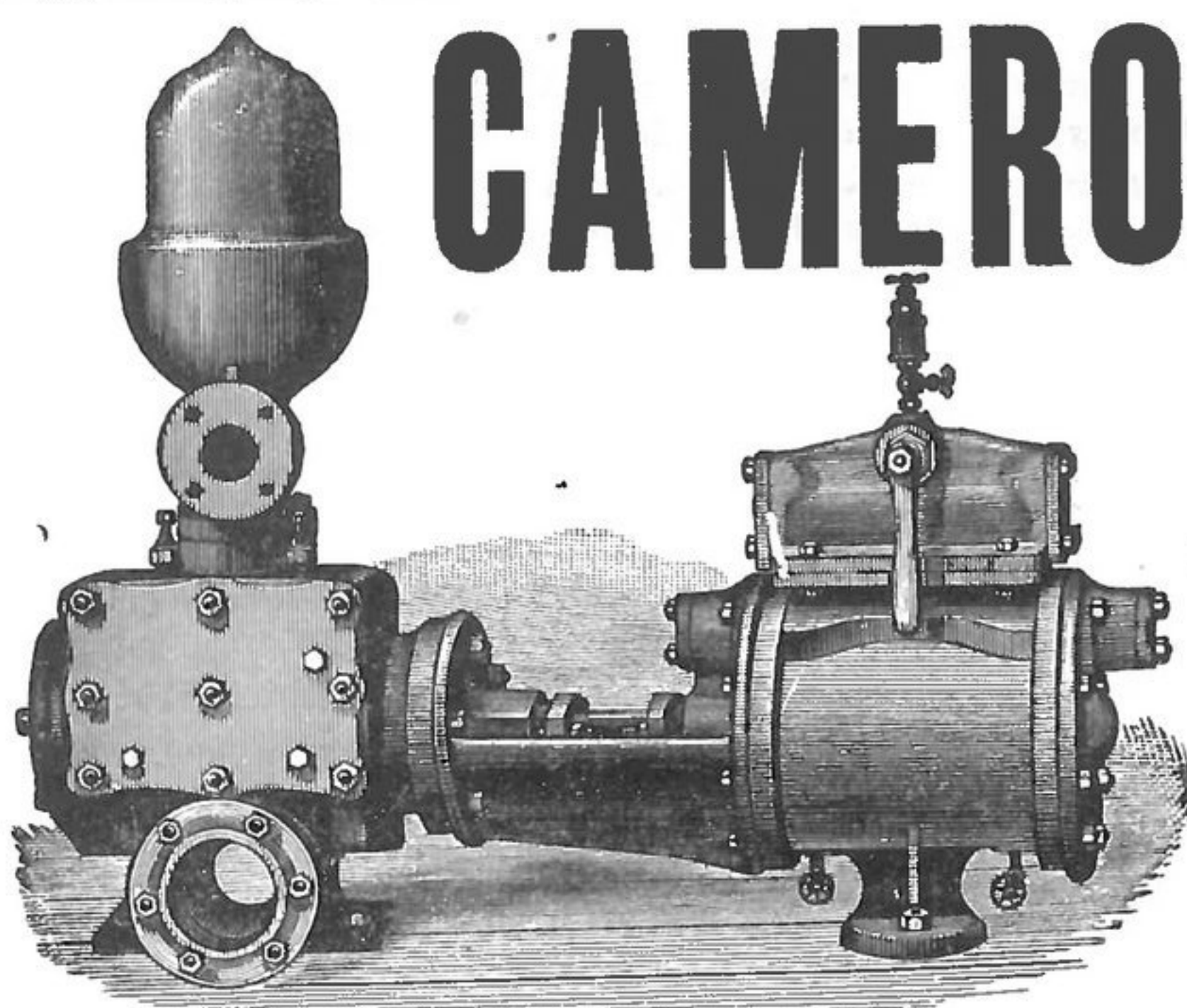
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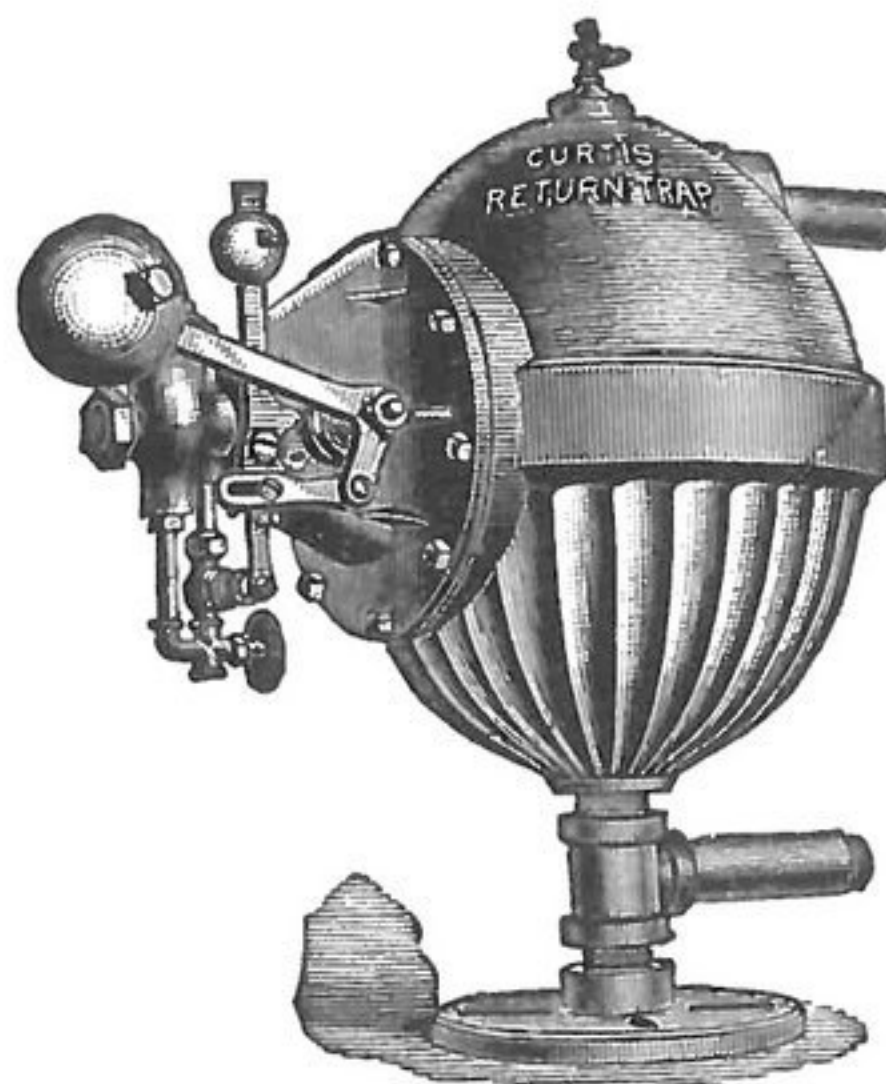
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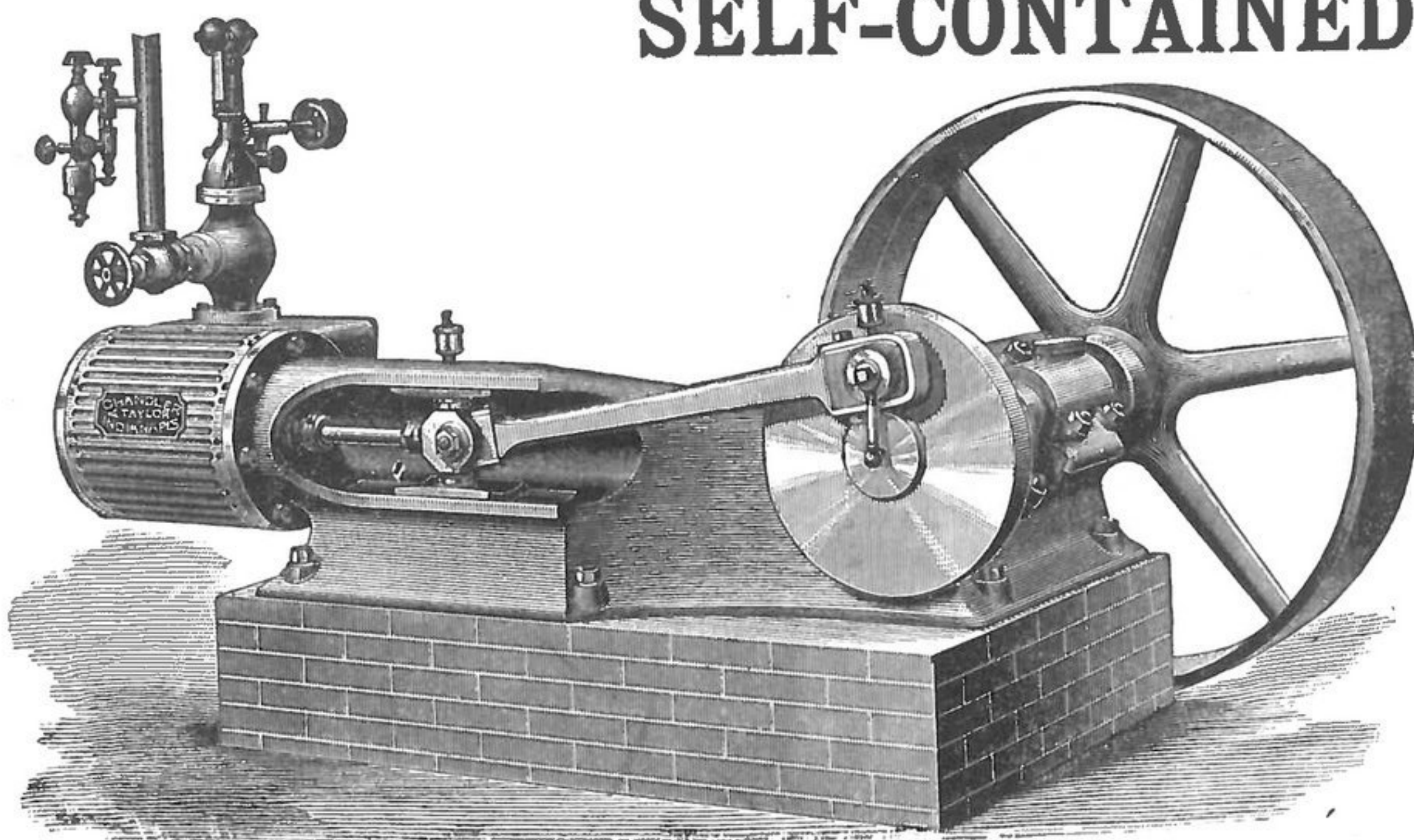
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Engines, Saw-Mills and Drain Tile  
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# NOTES & NEWS

Camden, Tenn., men project a flour-mill.  
 H. W. Vogel's mill, Wilton, Wis., burned.  
 Mesquite, Tex., men will build a flour-mill.  
 Dr. F. Berry, Loudon, Tenn., builds a flour-mill.  
 Walker & Byers, millers, Frankfort, O., sold out.  
 J. C. Wright, grist-mill, moves to El Dorado, Ark.  
 J. F. Clark, Manchester, N. C., builds a grist-mill.  
 W. J. Jones, grist-mill, Franklinville, N. Y., failed.  
 U. J. Holland, Madisonville, Ky., improves his mill.  
 Wm. Aderholt, Lincolnton, N. C., improved his flour-mill.  
 M. T. Abernathy and others, Pulaski, Tenn., want grist and flour mill machinery.  
 The Graysville, Ga., Mining & Mfg. Co. will add a flour-mill to their corn and feed mill.  
 Elmer Wilson's flouring-mill, Cana, Ind., burned; fire incendiary; loss \$10,000; no insurance.  
 Hodges & Newton, millers, Florence, S. C., dissolved, C. B. Hodges continuing the business.  
 J. J. Hardage & J. L. Manning, Marietta, Ga., are repairing and will operate the Howell grist-mill.  
 The Greenville, Miss., Elevator & Warehouse Co., capital stock \$25,000, has been organized to build a grain-elevator.  
 The Dakota wheat acreage in 1889 was 2,606,000 acres in North Dakota and 2,000,000 acres in South Dakota, a total of 4,606,000 acres.  
 J. L. Lea and others, Baird, Tex., organized the Callahan Mill Co., capital stock \$10,000 to build a roller flour-mill and other plants.  
 W. W. Hedges, New Decatur, Ala., has information about a proposed 125-barrel roller flour-mill soon to be built there by Kentucky men.  
 G. C. Buford, Mammoth Springs, Ark., and others have incorporated the Crescent Roller Mill Co., capital stock \$50,000, to build a 200-barrel flouring-mill; they want machinery.  
 Chandler & Taylor Co., Indianapolis, Ind., are finishing and shipping on an average two of their superior engines a day. Their sales are so rapid that they can not accumulate any stock at either of their agencies or at home. Merit tells  
 H. Stockenstorm, the Minnesota Commissioner of Statistics, has prepared a table showing the acreage and yield of the principal cereals of the state for 1889. The report places the wheat yield at 45,498,205 bushels; corn 22,115,769; oats 48,253,799; barley 9,105,209; flax 1,647,226.  
 Says the Minneapolis Market Record of October 1: Wheat is now moving very freely in the country for this year of unusually slow marketing. The movement has until the last few days been disappointingly small from the start, partly because farmers believed in higher prices and further because the granaries of merchants and millers were empty at all interior points, and considerable of the wheat that has been sold by farmers has gone into such vacancies and has not appeared in public reports of movement or of stocks.  
 A syndicate composed of Arnold, Carlton & McCord, Geo. E. Hoppie & Co., J. F. Simonds & Co., and E. A. Robertson & Co., of Atlanta, Ga., and P. P. Williams & Co., of Vicksburg, Miss., have recently purchased the Atlanta Elevator for \$40,000, including a half acre of valuable ground located in the heart of the city. They have formed a stock company under the name of the "Atlanta Elevator & Warehouse Co." J. K. P. Carlton, of Arnold, Carlton & McCord, is president; Geo. E. Hoppie, of Geo. F. Hoppie & Co., is general manager and treasurer; Geo. M. Hope, of E. A. Robertson & Co., is auditor. They propose to operate the property at once. Capacity 200,000 bushels.  
 Says Chicago Daily Business: The Farmers' Loan & Trust Company, of Kansas, has been wrecked. It was capitalized for \$1,000,000 and has placed about \$3,000,000 of eastern money in farm lands in Kansas, Nebraska, Colorado and Dakota. The agent sent west to inspect matters

personally reported that the farm property mortgaged was in most part worthless; that many of the borrowers had deserted their holdings, and the buildings stood deserted and looted, many being in ruins. The western agents had gone into speculation as real estate agents, and thus, getting 2 per cent. commission on mortgages, had accepted any kind of property.

The National Pulley Covering Co., of Baltimore, Md., announce the establishment of their New York office at 58 New street, to which place all inquiries and correspondence from the New England States, New York and New Jersey should be addressed. Among their recent customers may be mentioned the Storrs Distilling Co., Cincinnati, O.; the Akron Electric Co., Akron, Ohio; S. L. Webster & Son, Cambridge, Md.; Hiram Walker & Sons, Walkerville, Canada; the Jackson Iron Works, New York, N. Y.; Hammond, Hull & Co., Savannah, Ga.; H. P. Deucher Co., Hamilton, Ohio; P. Green & Sons, Lenora, Kan.; Sauquoit Silk Co., Philadelphia, Pa.; Chas. Banister, Waco, Tex.; Wampanoag Mills, Fall River, Mass.

The Westinghouse Machine Company, Pittsburgh, Pa., report the following orders received in the month of August, 1889:

|  |            |
|--|------------|
| 23 Junior Engines,.....                | 630 H. P.  |
| 35 Standard Westinghouse Engines,..... | 1350 H. P. |
| 22 Automatic Compound Engines,.....    | 2055 H. P. |
| 80 Totals,.....                        | 4035 H. P. |

The annual election of The Westinghouse Machine Company was held at the Westinghouse Building in the City of Pittsburgh, Pa., on Tuesday, July 30th, 1889, at 3 p. m., and resulted as follows: *Directors*, George Westinghouse, jr., Ralph Bagaley, H. H. Westinghouse, John Caldwell, David E. Jackman. *Officers*, George Westinghouse, jr., President; Ralph Bagaley, Vice-President and Manager; H. H. Westinghouse, Consulting Engineer; David E. Jackman, Assistant Secretary and Treasurer; William A. Bole, Superintendent. Immediately after the annual meeting the Directors held a meeting, at which a three per cent. cash dividend was declared.

The Monthly Stock Bulletin of The Westinghouse Machine Co., Pittsburgh, Pa., issued August 1st, shows 232 completed engines in their warehouse and 218 engines in progress through the shops. This makes a total of 450 engines, aggregating 22,500 h. p. Orders for the past six months have averaged nearly 1,000 h. p. per month more than the output; hence the present stock of engines, large as it is, is much below the normal. The shops are now running on double turn and adding a line of heavy tools, and it is expected that their present capacity is fully 5,000 h. p. per month. It is the practice of the company to keep in stock for immediate delivery a full line of engines of every style manufactured by them, from a 5 h. p. Junior Engine to a 300 h. p. Compound Engine. At present they are oversold in some sizes, particularly in the Compound Engines, for which there is an extraordinary demand.

## BOOKS AND PAMPHLETS.

The October *Century* numbers among its principal contents an article on "Base-Ball—For the Spectator," by Walter Camp, illustrated by drawings from instantaneous photographs. The noted French actor, Coquelin, contributes a comparison of "Moliere and Shakspeare." The article is interesting as being a great actor's estimate of two great dramatic authors. Two full-page portraits accompany it. In the realm of fiction are two complete stories; one the romance of a newspaper office, and the other a tale of slavery. The first of these is written by a practical "newspaper man," who draws a realistic picture of life in the editorial rooms of a daily newspaper. Three papers on education and training-schools are accompanied by a number of illustrations. Other notable contents are: "In East-Siberian Silver Mines," by George Kennan; an account of the adoption of the XIII Amendment, in the Lincoln History; "Maria Mitchell's Reminiscences of the Herschels;" and the "War Diary of a Union Woman in the South," edited by George W. Cable. The usual departments are full of interesting contributions. The *Century Magazine* is issued on the first of each month and is to be had of any newsdealer—price 35 cents. The Century Co., 33 East 17th street, N. Y. This number is a particularly valuable and interesting one in every department.



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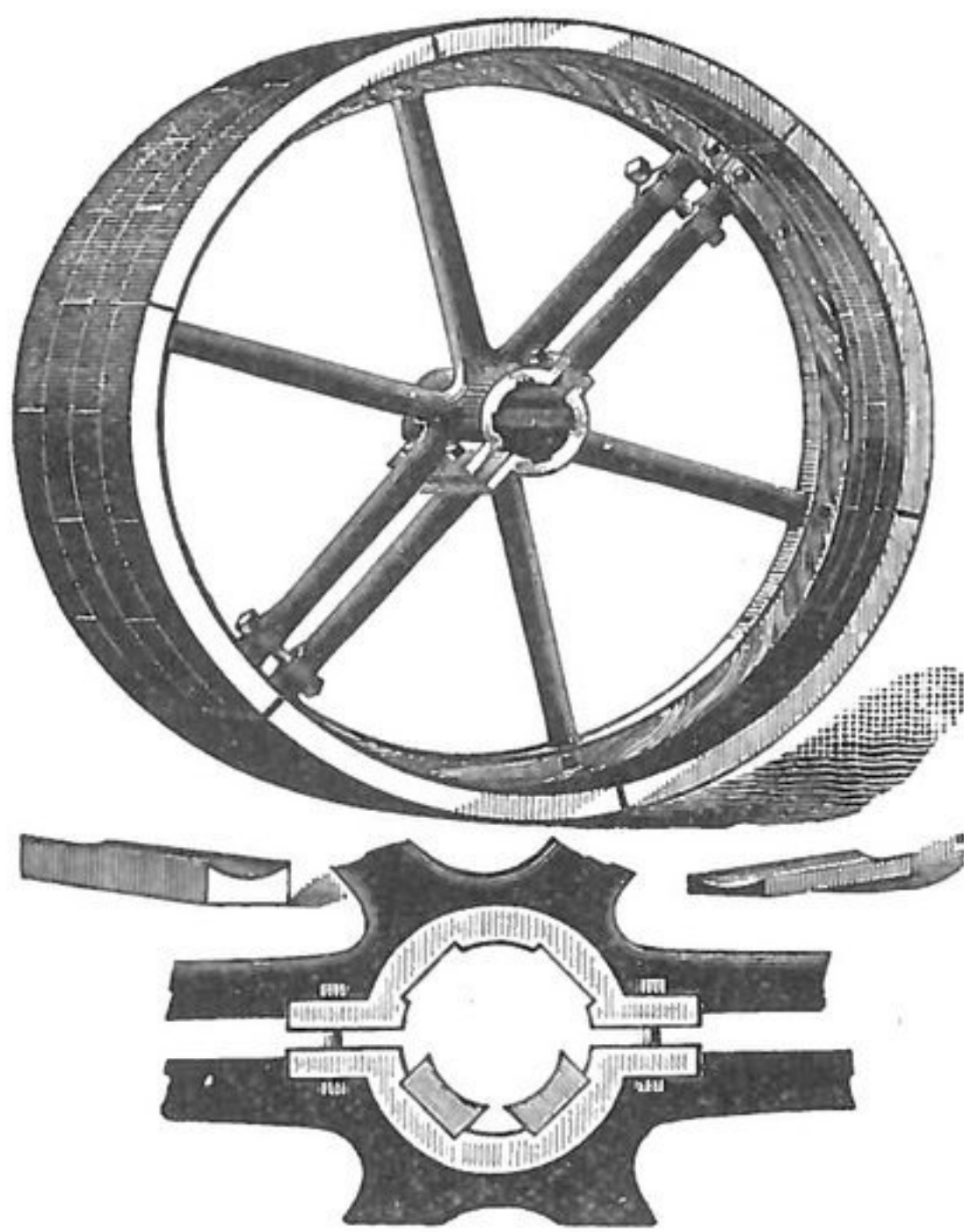


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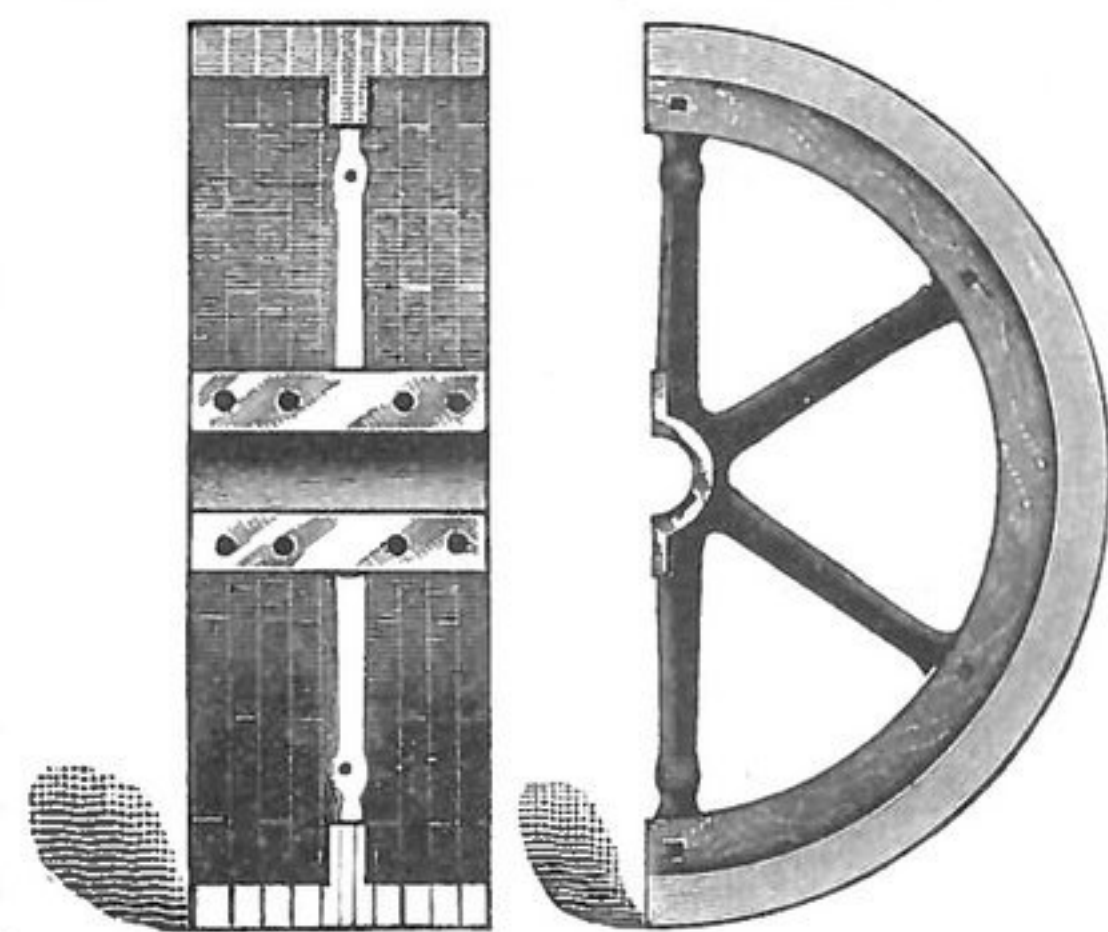
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### The Best Pulley on Earth!

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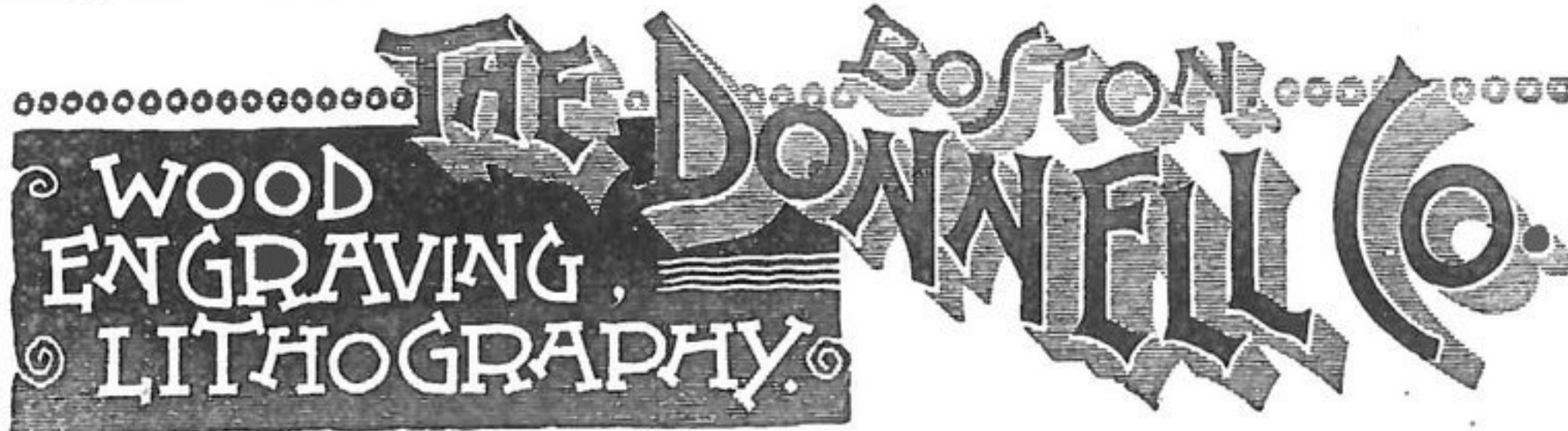
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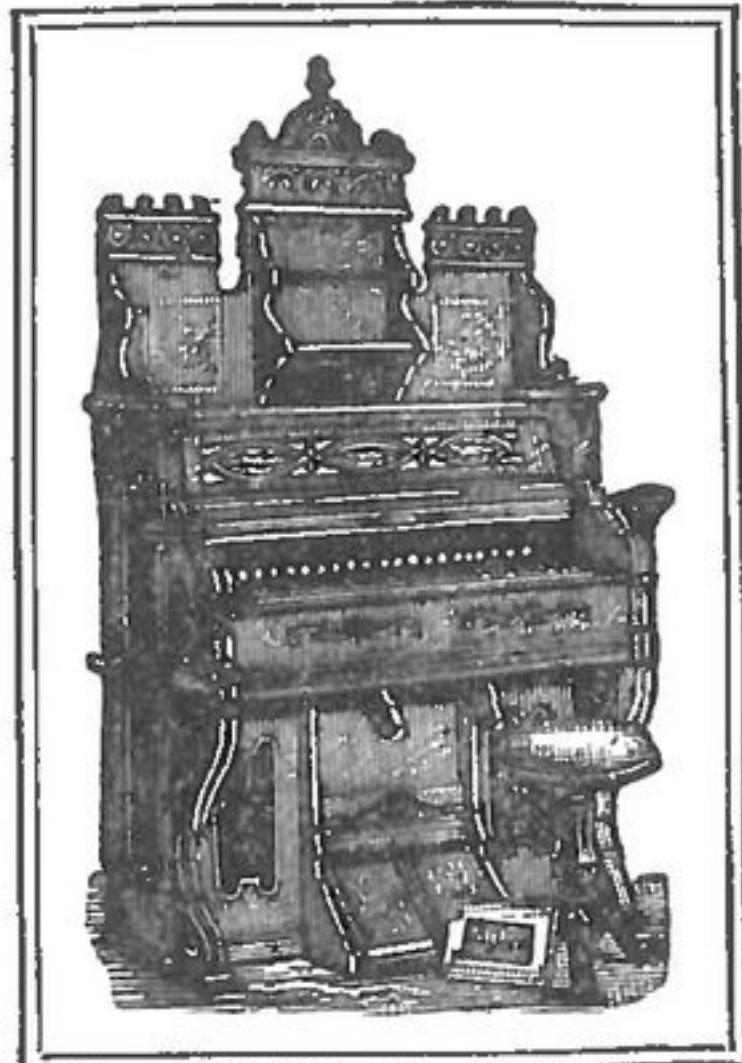


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## The BEST PIANOS and ORGANS IN THE WORLD

Are manufactured and sold for the least money by



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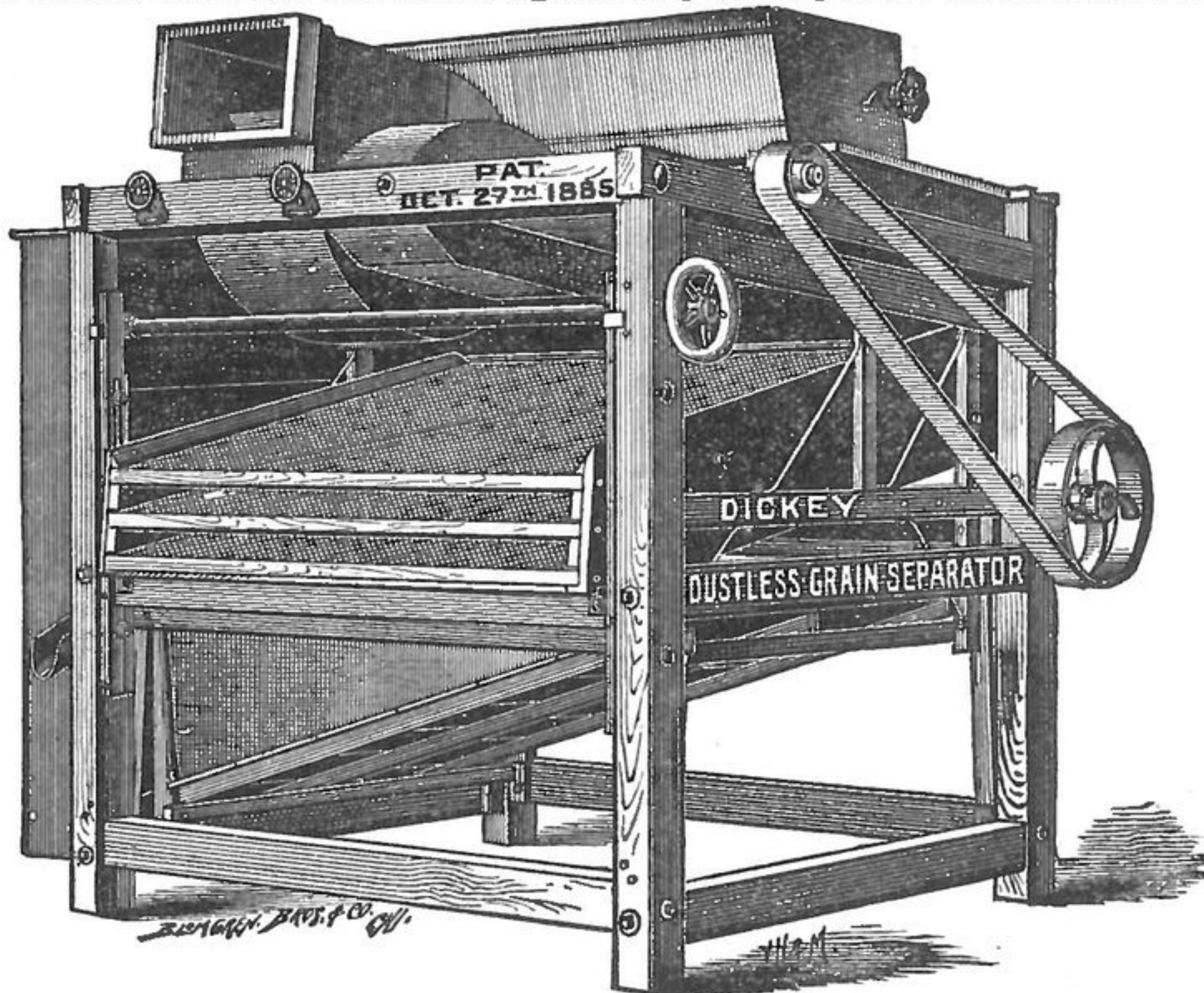
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This Separator is our latest and most perfect, and guaranteed to be the superior of any now on the market. This machine, as can be seen by the cut, is not a warehouse fanning mill with one patent attachment, but is a Dustless Separator, made for the express purpose of thoroughly cleaning and separating all kinds of grain in large quantities; its construction is such that the working machinery and weight is all within the parts or anchors.



WE CLAIM FOR IT SUPERIORITY.

WE CLAIM FOR IT SUPERIORITY.

We claim for it Superiority over everything of the kind made, in simpleness, durability, saving of power, capacity and cost of construction. Its height will accommodate any number of spouts from different points, without moving machine. They have a capacity from 700 to 1,500 bushels per hour. We also control exclusively the manufacture of the celebrated Dickey Giant, End and Side Shake, Warehouse Mills, that have attained such a world-wide reputation. Sent on approval to any reliable party. For full particulars address,

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## EUROPEAN ECHOES.

LATE Australian reports state that wheat at Adelaide is worth 40 shillings a quarter, at Sidney 42 shillings and at Melbourne 44 shillings a quarter f. o. b. for good grain. The prospect for the new crop is very encouraging at present.

AN English baker, T. Fletcher, of Birmingham, has patented a process of making bread, which consists of the addition of malt diastase, which secures a high yield of bread, makes the bread moist and improves the color. The patent malt diastase is sent out in condensed form.

BOLLACK, Sarassie & Co., of Paris, France, write as follows to the Liverpool "Corn Trade News:" "The crop has been definitely estimated by the Government at 38,250,000 quarters (306,000,000 bushels), which is somewhat less than previous estimates. The Government figure is undeniably a good figure, but it should be remembered that to-day millers are completely run out, whereas, last year, with the expectation of a bad crop, they had amply provided themselves with foreign wheat, which enabled them in a measure to force farmers to accept their terms, which resulted in a considerable drop in value. There is nothing of the kind this year. Prices of foreign wheat are above the parity of ours, and as now millers are obliged to buy largely sooner or later, our farmers will this time be in a position to stand upon their pretensions."

AN Imperial order has lately been promulgated in Russia by which the erection of ten elevator stores for grain will be secured along the South-Western Railway line; one is to be located at Odessa, and the rest in the interior. The expropriation of the necessary land for the elevator at Odessa has already been effected, while the South-Western Railway Co. is authorized to borrow 675,000 roubles from their workmen's Pension Fund for the purpose of building the other elevators. The following will be the official charges of the Odessa elevator: For discharging, 0.25 ceps; for weighing, 0.20 ceps; for storing for a month, 0.33 ceps; for ventilating the wheat twice a month (obligatory), 0.33 ceps; for each further ventilation, if desired, 0.15 ceps; for weighing on delivery, 0.15 ceps; for loading in wagons or sacks, 0.35 ceps; for winnowing the wheat, if desired, 0.24 ceps. The total charges per month per poud will therefore be 2 copecks or 12 cents per quarter per month, which will equal about 1½ cents per bushel.

SAYS the London "Miller" of September 16: Fortune does not weary in favoring the farmer, as regards ingathering his harvest. Drying breezes and hot sunshine have allowed most of the late fields of grain to be cleared in the past week over all parts of these islands. \* \* \* \* Millers are not disinclined to buy good fresh and sound samples of English wheat at prices level with foreign sorts. A deal for all the wheat grown on one farm at 33s. per quarter, as threshed out, has been made and infers that at such level the miller expects to make and sell flour. Offers in all the markets are recorded, but they have scarcely multiplied as much as was expected, and the reductions generally made a week ago

have not been often carried further. In some exchange buyers could scarcely obtain supplies as readily as they did. \* \* \* \* Out of some 60 market returns for wheat 12 have been cheaper, while the maize sales have been lower in price in half the exchanges. Flour has, perhaps, been weaker than wheat, and the rule has been to allow some concessions in value on most of the transactions reported. American flour sellers find 1s. per sack reduction on late rates is altogether insufficient to command custom. Just now imports of wheat deliveries from their late harvest furnishes the market with an excess, and last week an aggregate supply of some 575,000 quarters would leave over 100,000 quarters to replenish stocks. \* \* \* \* France stays at home rejoicing over its exhibition crowds and the fullness of its wheat cupboard. Its absence from active buying in the autumn compels Russia, India, &c., to deal with the United Kingdom on easy terms. But there must be a great reserve in buying power, as it has been lately gagged by the dock blockade of supplies.

SAYS the London "Millers' Gazette" of September 16: We gave in our last issue the figures of the imports of flour in the United Kingdom for the season ending August 31. We now give the figures in sacks of 280 pounds and compare them with the six previous years, which shows that, with the exception of 1885-86, those in the past season have been the smallest since 1881-82, the previous season's figures being the largest on record:

|              | Flour Imports into U.K.—Sacks of 280 lb. | Percentage to Total Imports of Wheat & Flour. |
|--------------|--|---|
| 1888-89..... | 5,726,100                                | 17½ per cent.                                 |
| 1887-88..... | 7,142,400                                | 23½ per cent.                                 |
| 1886-87..... | 6,770,800                                | 14 per cent.                                  |
| 1885-86..... | 5,519,200                                | 20 per cent.                                  |
| 1884-85..... | 6,642,800                                | 20 per cent.                                  |
| 1883-84..... | 6,040,800                                | 21 per cent.                                  |
| 1882-83..... | 6,590,800                                | 18½ per cent.                                 |

The yearly increase in the consumption of flour in the United Kingdom is probably 400,000 sacks, so that, compared with 1882-83, we shall require about 2 750,000 sacks more either of home-grown or foreign manufacture. The probability is that we shall import about 6,500,000 to 7,000,000 sacks, so that our own mills will have to manufacture something over 2,000,000 sacks, more than they did in 1883-83, which, with the far smaller number of millers existing in the United Kingdom than was the case seven years ago, makes the outlook so much the better for those who have survived the stormy period of the past decade. We append a detailed statement of our imports in the eight months ended August 31, showing the principal sources of supply:

| From—                | 1889.<br>cwts. | 1888.<br>cwts. | 1887.<br>cwts. |
|----------------------|----------------|----------------|----------------|
| U. S.—Atlantic.....  | 4,914,532      | 8,302,809      | 8,788,572      |
| " Pacific.....       | 944,391        | 695,535        | 1,000,461      |
| Austria-Hungary..... | 1,366,345      | 1,219,913      | 889,650        |
| Germany.....         | 850,595        | 414,854        | 306,762        |
| France.....          | 50,562         | 61,649         | 50,519         |
| Canada.....          | 384,532        | 335,236        | 438,316        |
| Sundries.....        | 279,768        | 245,085        | 92,453         |
| Total.....           | 8,791,225      | 11,365,081     | 11,566,733     |

It will here be seen that the decrease of about 4,400,000 hundredweights in the receipts from the Atlantic ports of America, compared with last year, is only offset by an increase of about 580,000 hundredweights in the shipments from Hungary and Germany.

## The Canton Cabinet Filing Case Company, Canton, Ohio.

MANUFACTURERS OF

### The New Buckeye Document Case & Letter File; Also All Kinds Office Furniture



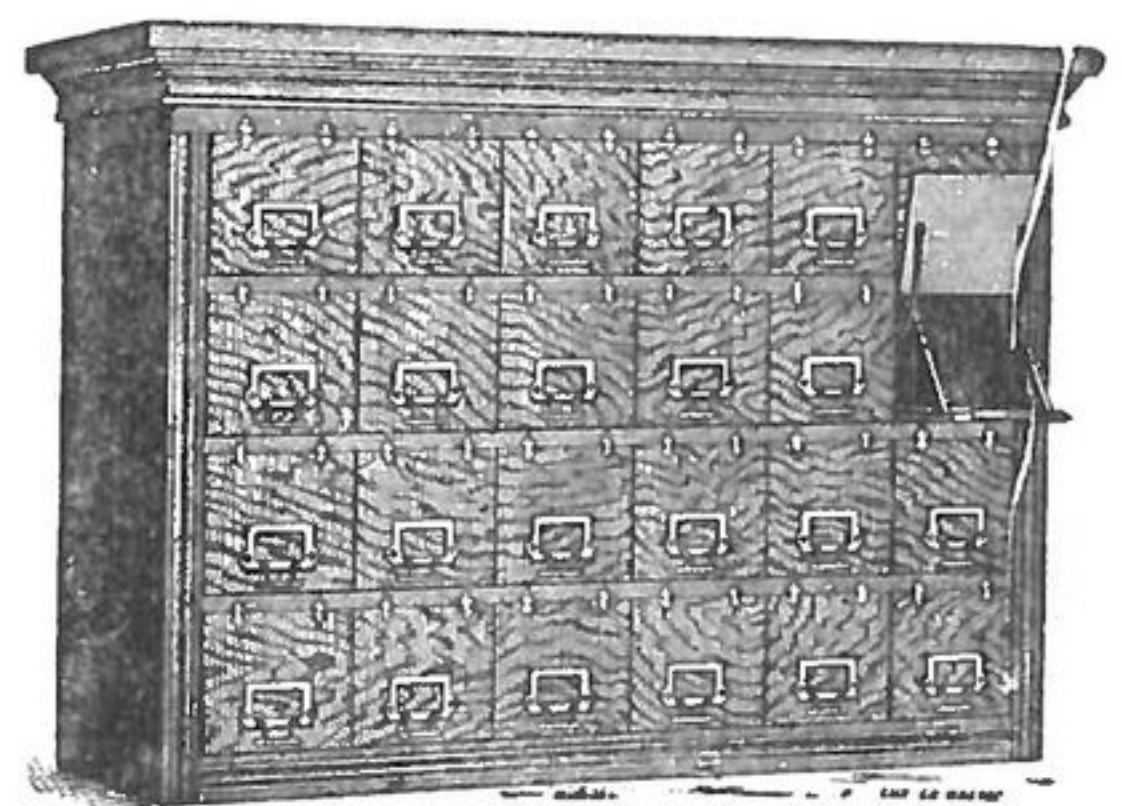
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**NO. 8** Represents one side of one of our Revolving Cabinet Letter Files and Document Cases Combined. It contains 30 Document Drawers and 8 Letter File Drawers. In filing letters we use first VOWEL of name on front of drawer, and LETTER FOLLOWING first VOWEL on Index Sheet within drawer. We also make more exhaustive systems which contain from 6 to 100 or more Filing Drawers.

**NO. 1** Represents one of our small Document Cabinets, for use on desks or brackets. Action of drawer can be seen in the cut. When front is raised inner drawer comes forward, exposing contents of drawer for inspection.

*Our Cabinet Files are Conceded to be the Most Convenient of Any in the Market. They are Compact, Simple, Complete, Durable and Ornamental.*

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BARREL HEATER.**

For all kinds of coop-  
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U. S. Send for Circular.

JOLIET STOVE WORKS. JOLIET ILL.

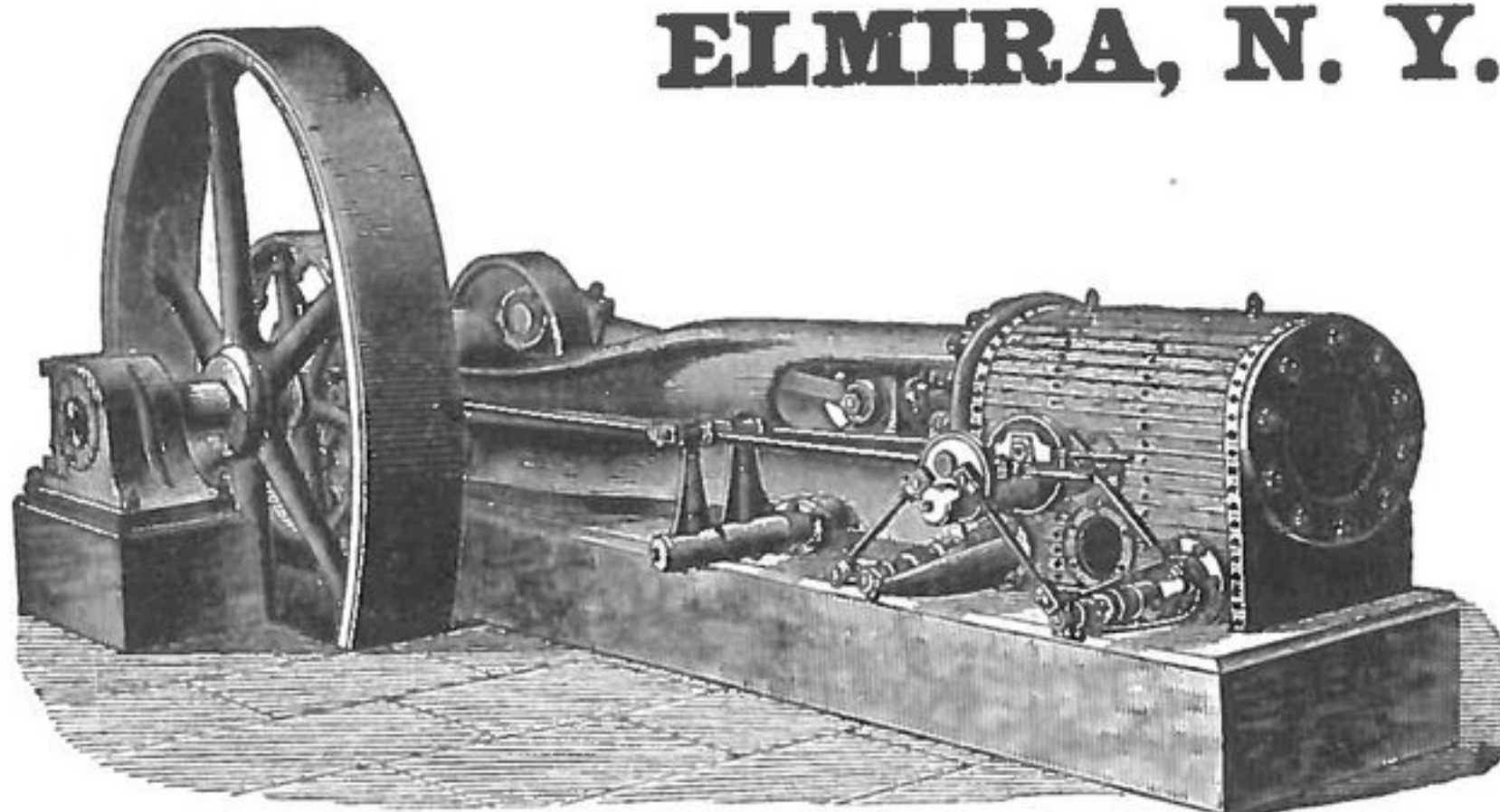
## PAYNE HIGH SPEED CORLISS ENGINE

SHAFT GOVERNOR COMBINED WITH CORLISS WRIST-PLATE.

ECONOMY OF FUEL.

REGULATION EQUAL TO ANYTHING IN USE.

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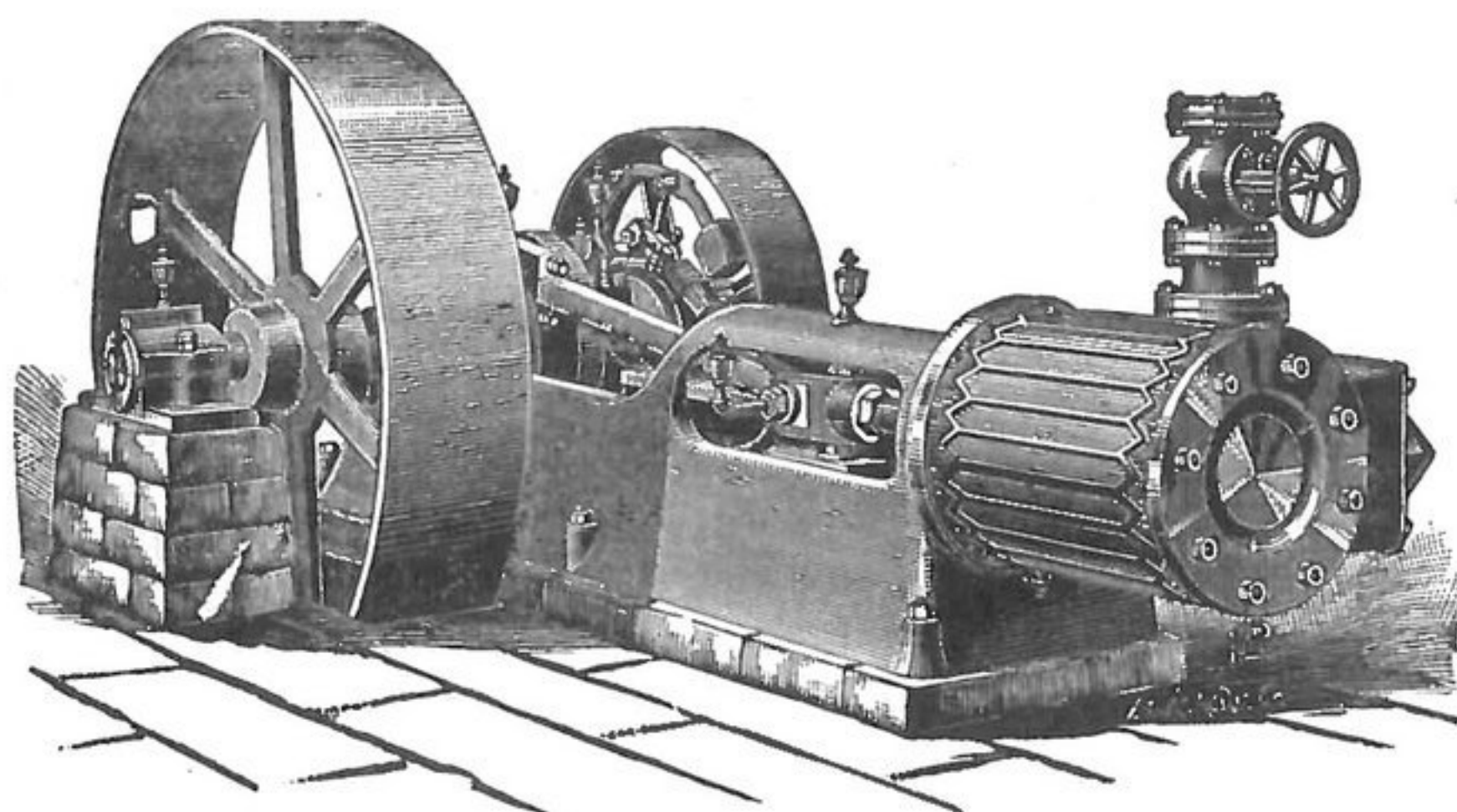
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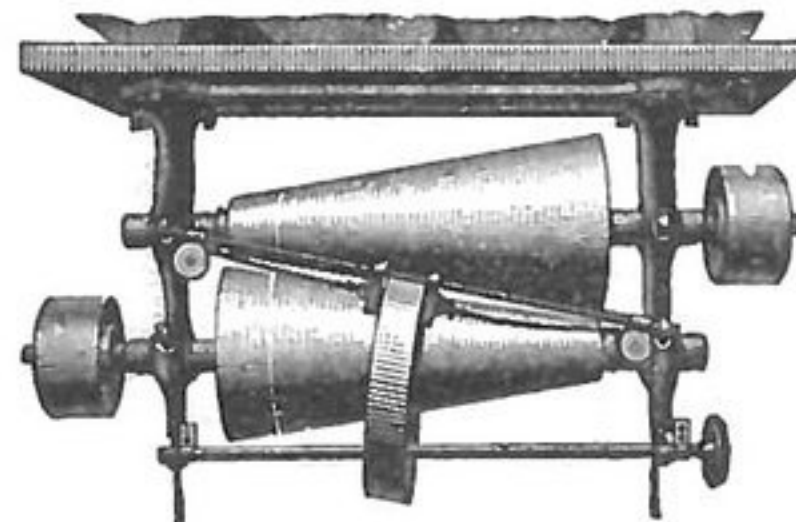
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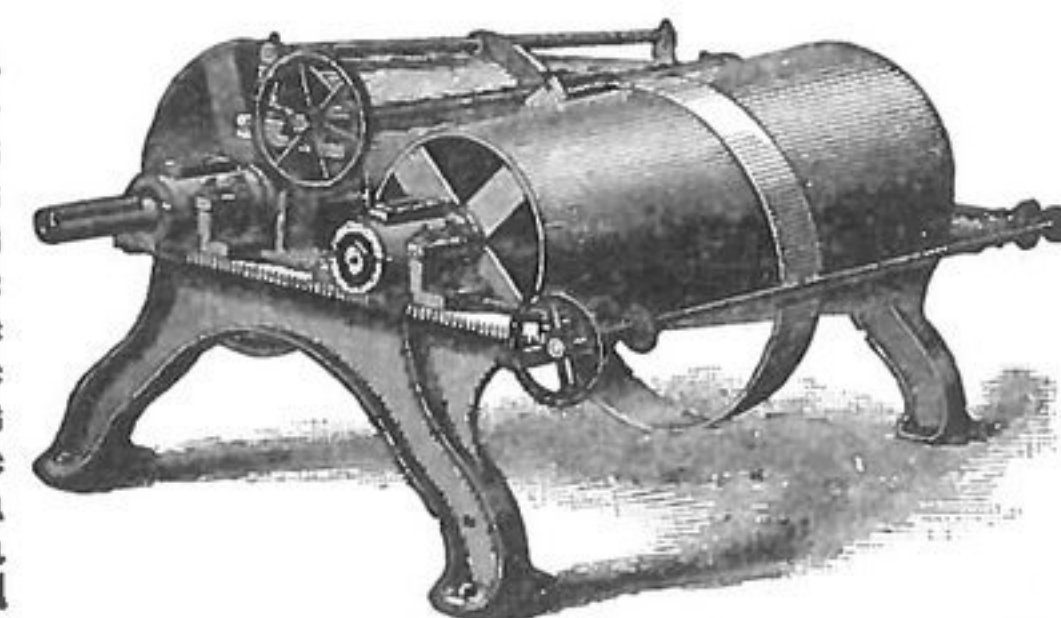
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OFFICE OF THE MILLING WORLD,  
BUFFALO, N. Y., Oct. 5, 1889.

Friday of last week was a day of great activity and irregularity in wheat. The bears pounded the market down 1c. September wheat closed at 86½c. Options in New York 20,000,000 bushels. Exporters took several loads for Great Britain. September corn closed at 40c. Options 1,000,000 bushels. Exports large. September oats closed at 26c. Wheat flour was strong generally on reduced stocks and lighter offerings. The other lines were featureless.

Saturday brought generally duller and easier markets. September wheat closed at 86c. Options 4,000,000 bushels. September corn closed at 40½c. and oats at 26½c. Wheat flour was slow, but unchanged in prices. Exporters did nothing. The minor lines were featureless.

Monday was a day of active and irregular markets, with a weak opening on large receipts and small clearances in New York, but with a stronger closing on smaller visible supply than had been anticipated. October wheat closed at 86½c., against \$1.06 on the corresponding day of last year, November at 87½c., against \$1.06½, December at 88½c., against \$1.08½, and May at 92½c., against \$1.12. Options 5,500,000 bushels. Corn was active, with September closing at 39½c., against 51c. last year, November at 40½c., against 51½c., and December at 41½c., against 51½c. Options 1,800,000 bushels. October oats closed at 29½c., against 30c. last year, November at 26½c., against 30½c., and December at 26½c., against 31½c. Wheat flour was slow, but unchanged in prices, though easier in tone and dull, with less demand. Minneapolis millers have been free sellers of bakers' extras and patents c. i. f. to United Kingdom at 21s 9d and 29s respectively, which was from 1s to 3s below the present prices in New York. These sales have filled up the other side and taken all the ocean freight room, which shuts out New York shippers, even when they have orders at old prices, as some still have. The minor lines were quiet and featureless. The visible supply in the United States and Canada was:

|             | 1889.<br>Sept. 28. | 1888.<br>Sept. 26. | 1887.<br>Oct. 1. |
|-------------|--------------------|--------------------|------------------|
| Wheat.....  | 17,853,213         | 31,509,963         | 30,596,777       |
| Corn.....   | 12,933,598         | 10,048,020         | 7,087,448        |
| Oats.....   | 5,739,612          | 6,914,960          | 5,177,636        |
| Rye.....    | 1,152,456          | 834,403            | 321,962          |
| Barley..... | 585,559            | 364,438            | 1,128,358        |

Tuesday was a day of irregular and active markets. Wheat opened higher and closed lower. October opened with October wheat at 86½c. and closed at 85½c., against \$1.07¼ last year. November closed at 87c., against \$1.09½. December closed at 88½c., against \$1.11. January closed at 89½c., against \$1.12½. May closed at 92½c., against \$1.14½. Chicago estimates placed the 1889 crop in the United States at not less than 500,000,000 bushels. Exporters did little. Options 8,600,000 bushels. October corn closed at 39½c., against 51½c. last year on the corresponding date, November at 40½c., against 51½c., and December at 41½c., against 51½c. Options 4,250,000 bushels. Trading was large. October oats closed at 26½c., against 29½c. on the corresponding date last year, November at 26½c., against 30½c., and December at 27½c., against 31½c.

Wheat flour was dull, but firm at old prices, on light stocks and small offerings to arrive in New York. Exporters did little. The New York stocks of flour included 70,875 barrels of winter and 38,150 of spring, a total of 109,025, against 111,475 on September 1 and 63,200 on October 1, 1888. The minor lines were not quotably changed.

Wednesday brought less active markets in some lines. Wheat was quiet. Western re-

ceipts were smaller. New York receipts were still free, being 315,000 bushels, against 24,000 bushels cleared. Export demand was small. October wheat closed at 85½c. Options 3,750,000 bushels. October corn closed at 39½c. Options 1,200,000 bushels. Exporters were active. October oats closed at 26½c. Options 550,000 bushels. Rye grain was nominally 50@51c. for spot No. 2 western afloat in New York, and 48@53c. for Jersey and Pennsylvania in car-lots on track. Barley was neglected and unsalable on the open market, with nominal quotations of 70@75c. for old Canada and 65@68c. for new. Mill-feed was in small demand at 55@60c. for 40, 60 and 80-lb., 77½@82½c. for 100-lb., and 70c. for rye. Buckwheat grain was 50c. a bushel.

Wheat flour was dull and easier, with concessions necessary to sell the trade-brands of spring flours. Shipping extras were steady, though not active. Winter trade-brands were steady and unchanged. Exporters did only a small business during the day. The quotations were as follows:

| SPRING FLOUR.    |             |             |
|------------------|-------------|-------------|
|                  | Sacks.      | Barrels.    |
| No grade.....    | \$1.55@1.85 | \$....@.... |
| Fine.....        | 1.95@2.20   | 2.10@2.35   |
| Superfine.....   | 2.20@2.45   | 2.45@2.80   |
| Extra No. 2..... | 2.45@2.75   | 2.70@3.00   |
| Extra No. 1..... | 3.15@3.35   | 3.40@3.90   |
| Clear.....       | 3.25@3.50   | 3.55@3.65   |
| Straight.....    | 3.90@4.25   | 4.30@4.85   |
| Patent.....      | 4.75@4.95   | 4.95@5.35   |

| WINTER FLOUR.    |             |             |
|------------------|-------------|-------------|
|                  | Sacks.      | Barrels.    |
| No grade.....    | \$1.70@2.00 | \$....@.... |
| Fine.....        | 2.20@2.50   | 2.30@2.60   |
| Superfine.....   | 2.55@2.75   | 2.55@2.80   |
| Extra No. 2..... | 2.60@2.90   | 2.70@3.00   |
| Extra No. 1..... | 3.00@4.00   | 3.15@3.95   |
| Clear.....       | 3.55@3.90   | 3.85@4.15   |
| Straight.....    | 4.15@4.25   | 4.20@4.50   |
| Patent.....      | 4.40@4.60   | 4.60@4.90   |

| CITY MILLS.       |           |  |
|-------------------|-----------|--|
| W. I. grades..... | 4.25@4.30 |  |
| Low grades.....   | 2.60@2.65 |  |
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Rye flour was dull and in buyers' favor at \$2.90@3.25. Sales were small. Buckwheat flour was dull and easy at \$1.75@2.35 for old, and \$2.40@2.75 for new spot and to arrive. Corn products were featureless and quiet at the following quotations: Coarse meal 78@80c; fine yellow 90c; fine white 95c; Brandywine \$2.70; Sagamore \$2.70; Western and Southern \$2.65@2.70; grits \$2.60, and hominy \$2.50@2.60.

Thursday brought no decided changes in the markets. October wheat closed at 85½c. Options 3,280,000 bushels. Receipts 141,000 bushels, spot sales 126,000 bushels, and export 30,000 bushels. October corn closed at 39½c. Receipts 192,000 bushels, exports 51,000 bushels, spot sales 224,000 bushels, and options 600,000 bushels. October oats closed at 26½c. Receipts 70,000 bushels, spot sales 103,000 bushels. Wheat flour was active. Sales 26,700 barrels. Price quotations included the following: Low extras \$2.65@3.00; city mills \$4.30@4.45; city mills patents \$4.90@6.00; winter wheat low grades \$2.60@3.00; fair to fancy \$3.10@4.65; patents \$5.25@5.20; Minnesota clear \$3.25@4.15; do straights \$3.85@5.00; do patents \$4.35@5.50; rye mixtures \$3.25@4.00; superfine \$2.10@2.85. The minor lines were featureless throughout.

#### BUFFALO MARKETS.

WHEAT—In moderate demand and market quiet but firmer, 1,000 bu No. 1 hard changed hands at 90c; and 8,500 bu No. Northern at 87c in lots, which were about the only sales of any importance reported all day; 90c was asked for No. 1 hard at the opening but before two o'clock 90½c was asked. Winter wheat in good demand but light offerings and market firm; No. 3 extra red was quoted at 78@80c in store and No. 2 red 87c asked. There was no No. 3 red in the market, and 1 carload No. 2 extra white sold at 86½c. on track. CORN—In fair demand and market ¼c higher at the opening but it soon declined to yesterday's prices at which a few carloads were sold. No. 2 corn was quoted at 38½c; No. 3 do at 34½c; and No. 2 yellow at 3½c. in store. OATS—Firm but scarce. No. 2 white in store was sold at 26c; on track at 26½c; No. 3 white at 24½c. and No. 2 m red at 24c on track. RYE—Nominal. No. 2 western quoted at 48c. on track. BARLEY—No. 1 Canadian was quoted at 70c. No. 2 do at 65c; No. 3 extra at 62c; No. 3 at 59@70c; No. 2 western at 53c; No. 3 extra do at 56c; and No. 3 do at 45@58c; State choice was offered at 70c. CANAL FREIGHTS—Strong and unchanged. Wheat to New York, 5c; corn, 4½c; oats, 3½c. Corn to Albany, 4c; corn to Schenectady and Rotterdam, 3½c; to Utica, 2½c; wheat to

Syracuse, 2½c; corn, 2½c; wheat to Rochester, 2c. Lumber rates to New York, \$2.50; to Albany, \$2.00. RAILROAD FREIGHTS—To New York, Baltimore and Philadelphia rate points on grain, flour and feed 18c per 100 lbs; to Albany and West Troy, 10½c; to Boston, 15½c. FLOUR—City ground—Patent spring, \$6.00@6.25; straight Duluth spring, \$5.75@6.00; bakers' spring, best, \$5.50@5.75; do rye mixture, \$5.75@6.00; patent winter, \$6.75@7.00; straight winter, \$4.75@5.00; clear winter, \$4.50@4.75; cracker, \$4.50@4.75; graham, \$4.50@4.75; low grade, \$2.75@3.00; rye \$3.00@3.5 per bbl. OATMEAL—Akron, \$6.00; Western, \$5.75 per bbl; rolled oats, in cases, 72 lbs, \$3.25. CORNMEAL—Coarse, 85c; fine, 90c; granulated, \$1.50 per cwt. MILLFEED—City ground coarse winter, \$12.00@12.50; fine winter, \$12.00@12.50; finished, \$14.00@14.50 per ton; coarse spring, 11.50@12.00; fine spring, \$11.50@12.00.

Says the New York Tribune in an article on the grain and flour markets: Nobody knows yet within 20,000,000 bushels what the wheat yield of this country is in 1889, and nobody knows within many times that quantity what the yield of the world has been. Neither are there trustworthy statistics of stocks brought over from last year in other countries; authorities differ many million bushels about the stock of Russia alone. But actual movements of grain give evidence which can not well be disputed or twisted. British imports of wheat in July and August were 900,000 hundredweights smaller this year than last, with imports of flour about the same. That indicates no recognized prospect of want in the country having need to import more wheat than any other. The exports from the United States to all countries from all ports for July, from all the principal ports for August, and from the chief Atlantic ports for three weeks of September, have been 25,300,000 bushels of wheat, flour included, against 25,600,000 for the same times and places last year. A decrease of 3,300,000 bushels in the quantity demanded from the country which exports more wheat than any other does not indicate any apprehension of scarcity abroad. The foreign price tells the same story. British wheat averaged for the second week in September 30s. 2d., against 30s. 1d. for the same week last year. A fall of more than 20 per cent. in price does not foreshadow world-wide famine. No one knows how large a stock of wheat Russia has carried over from last year, or how large the new crop is, and contradictory statements on both points are wide apart. But the cold facts are that Russia exported in August nearly 3,000,000 hundredweights to Great Britain, against about 2,000,000 hundredweights in the same month last year, and an increase of one-half in exports does not indicate much scarcity in Russia. The exports for eight months ending with August were 14,347,643 hundredweights to Great Britain, against only 11,546,034 for the previous year, and no such freedom of shipments at present low prices would be likely to occur if Russian supplies were actually scanty.

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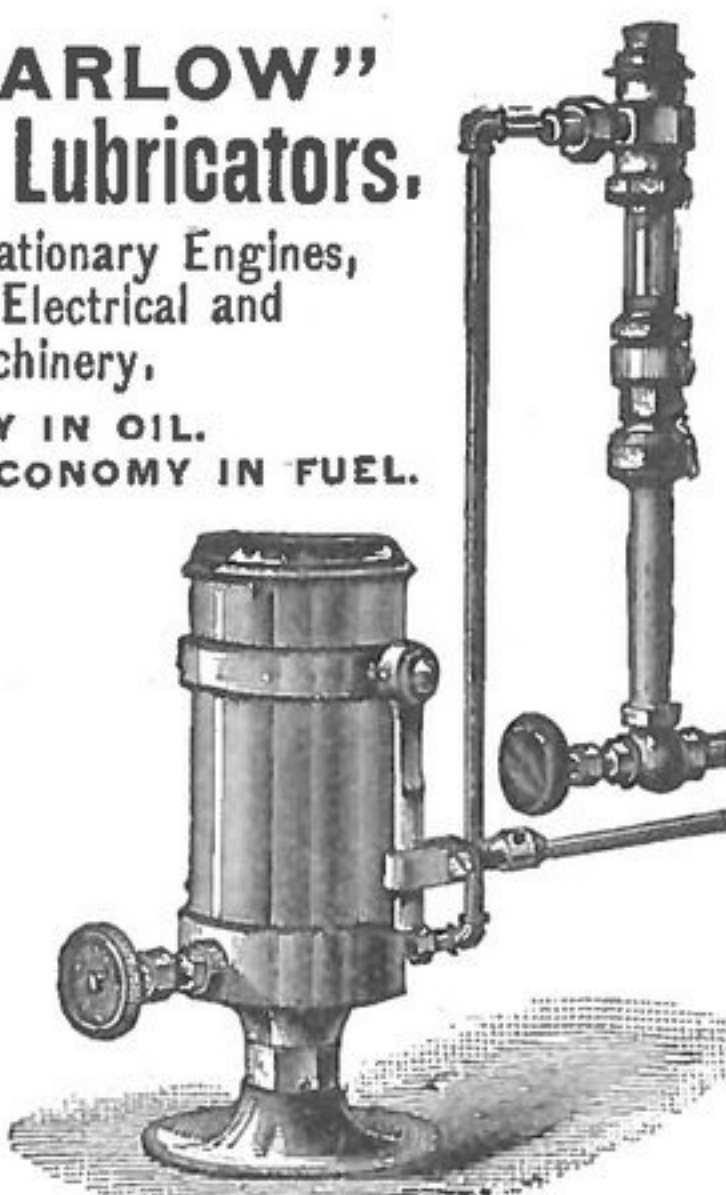
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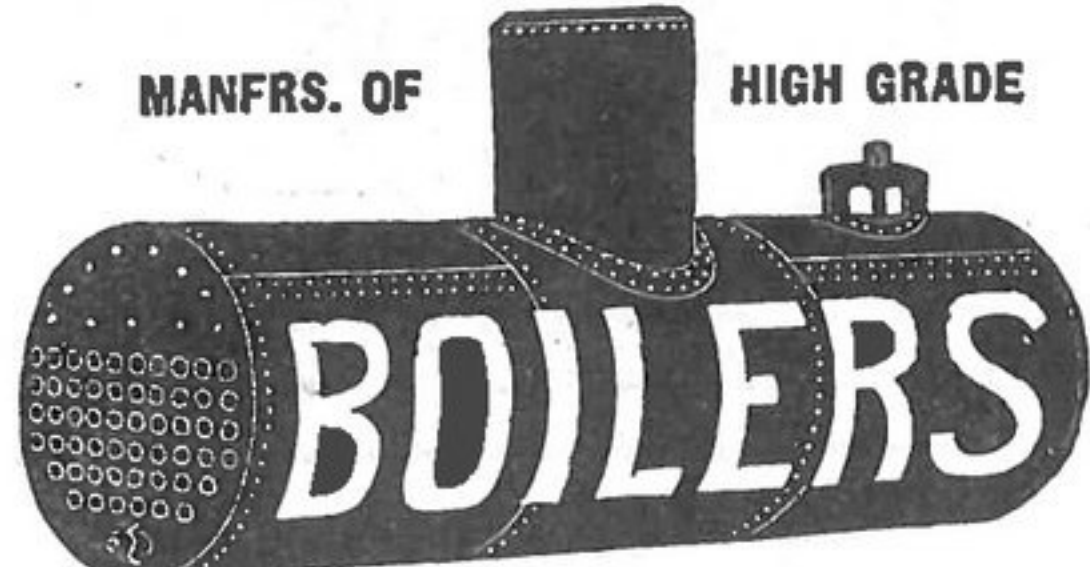
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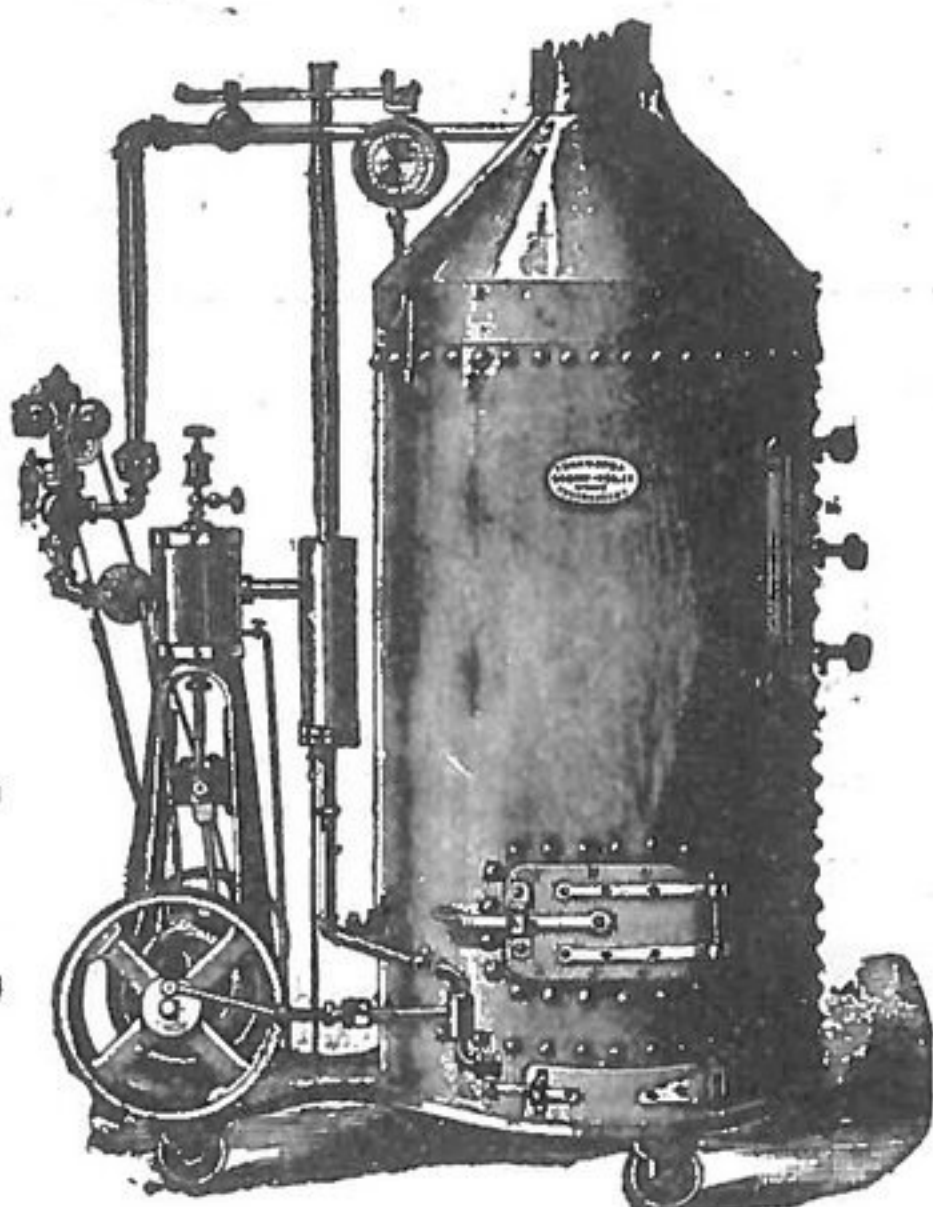
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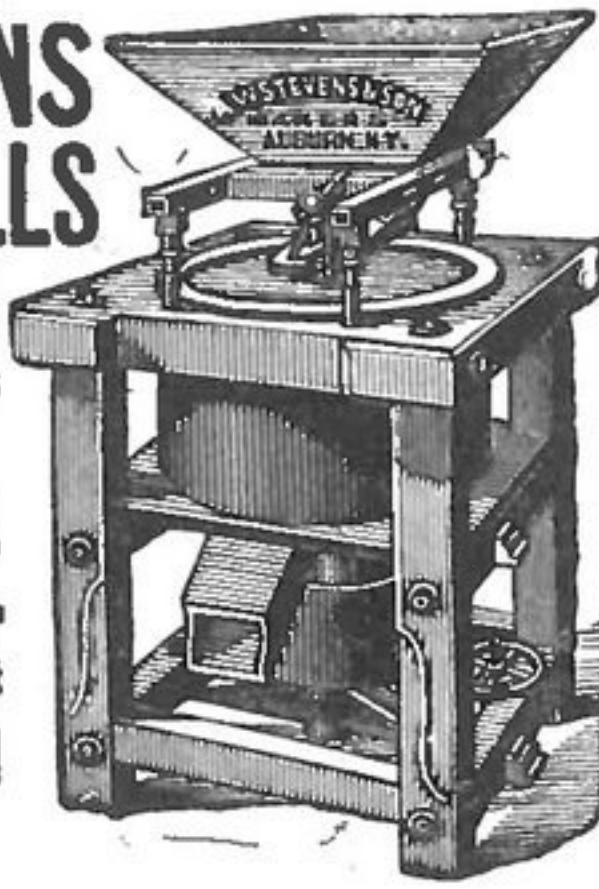
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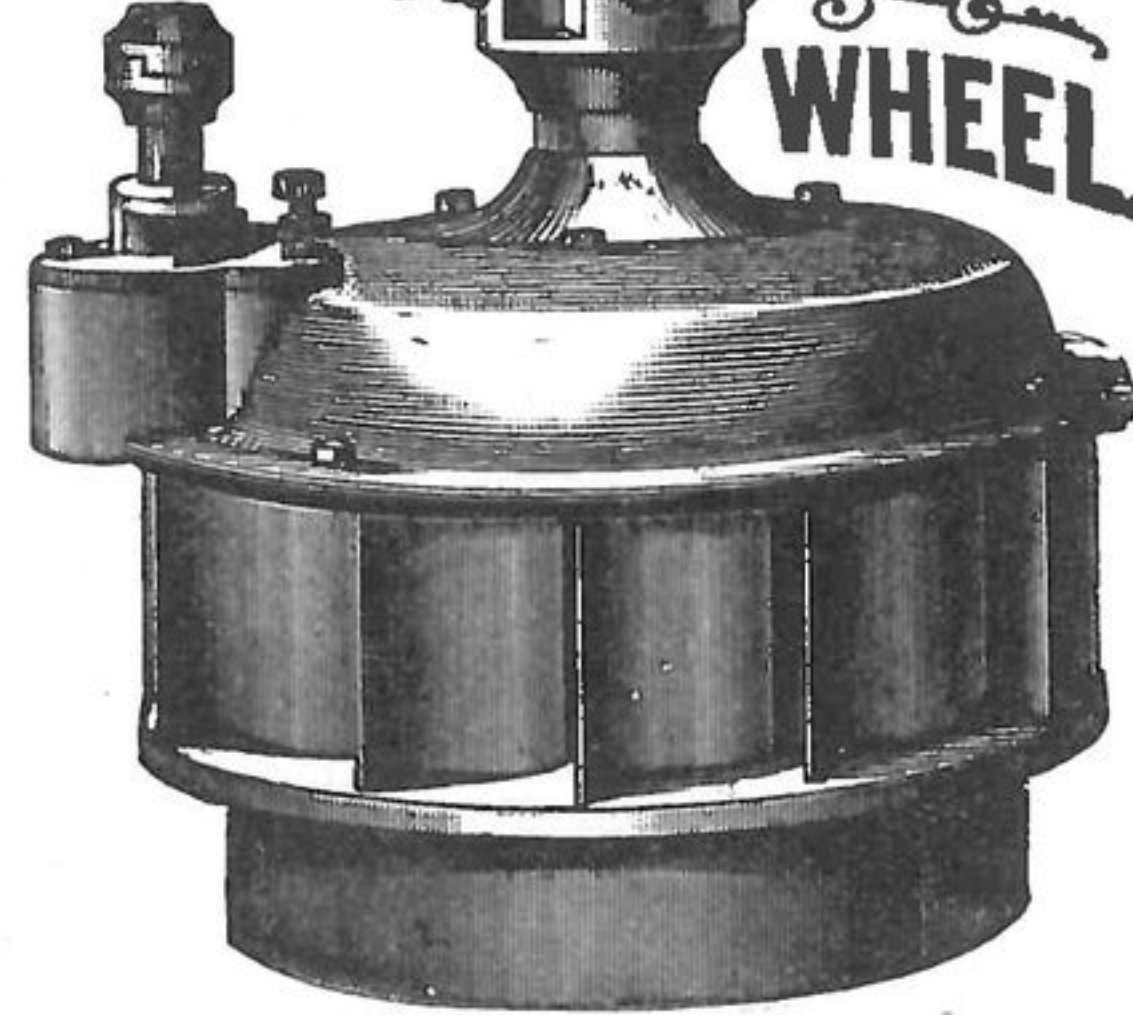
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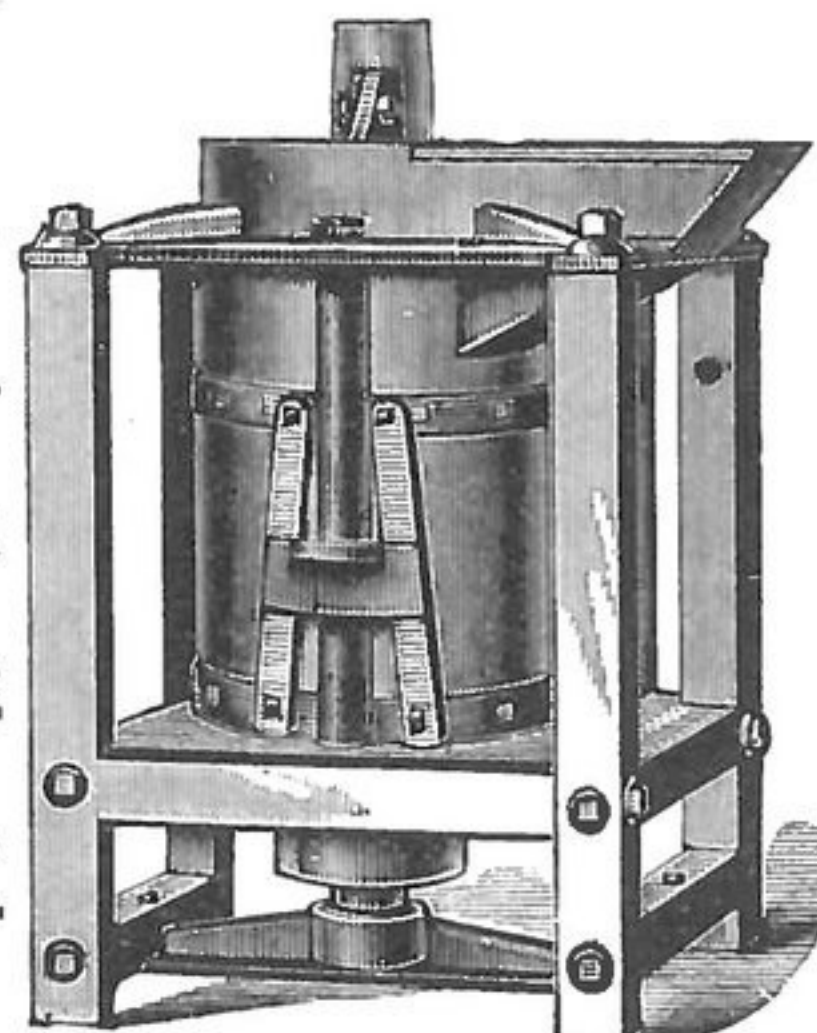
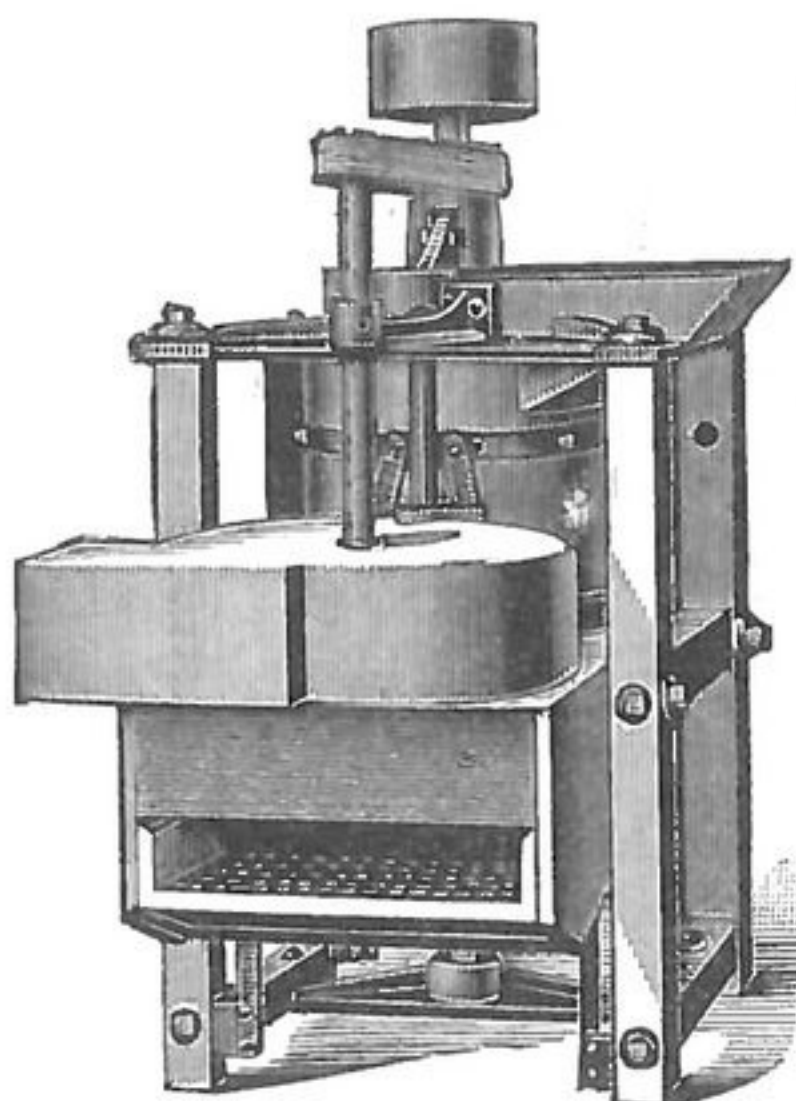
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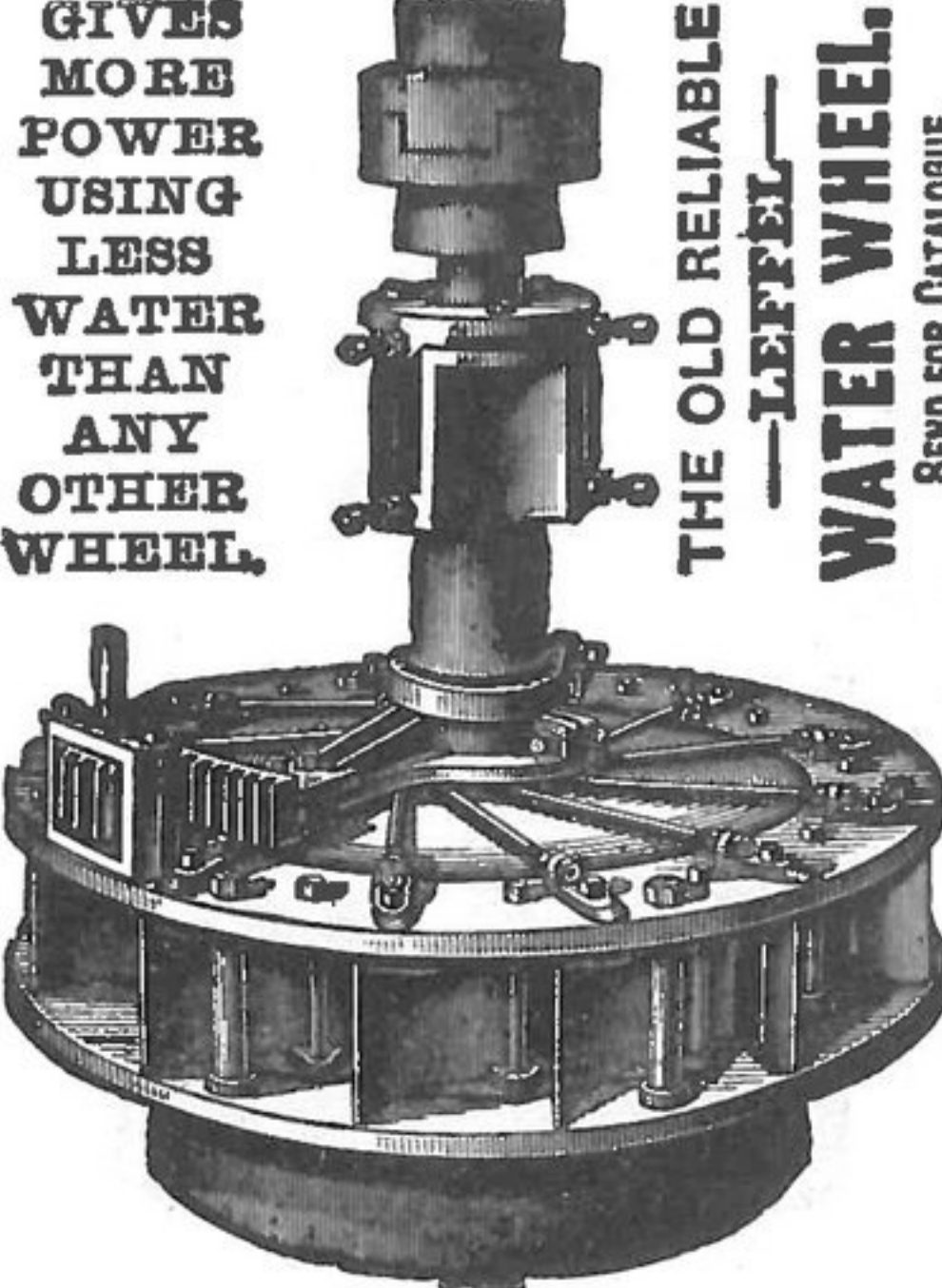
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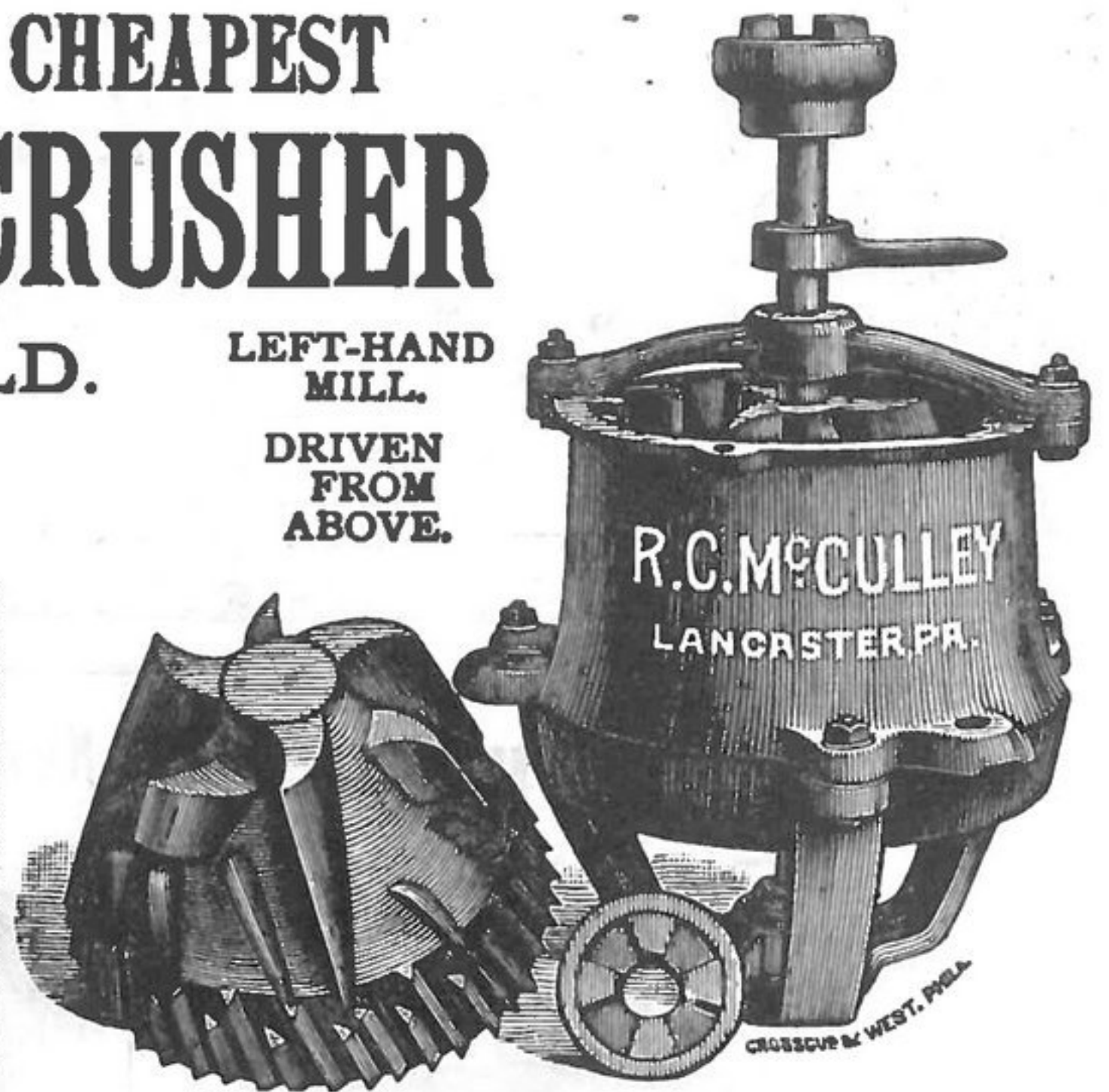
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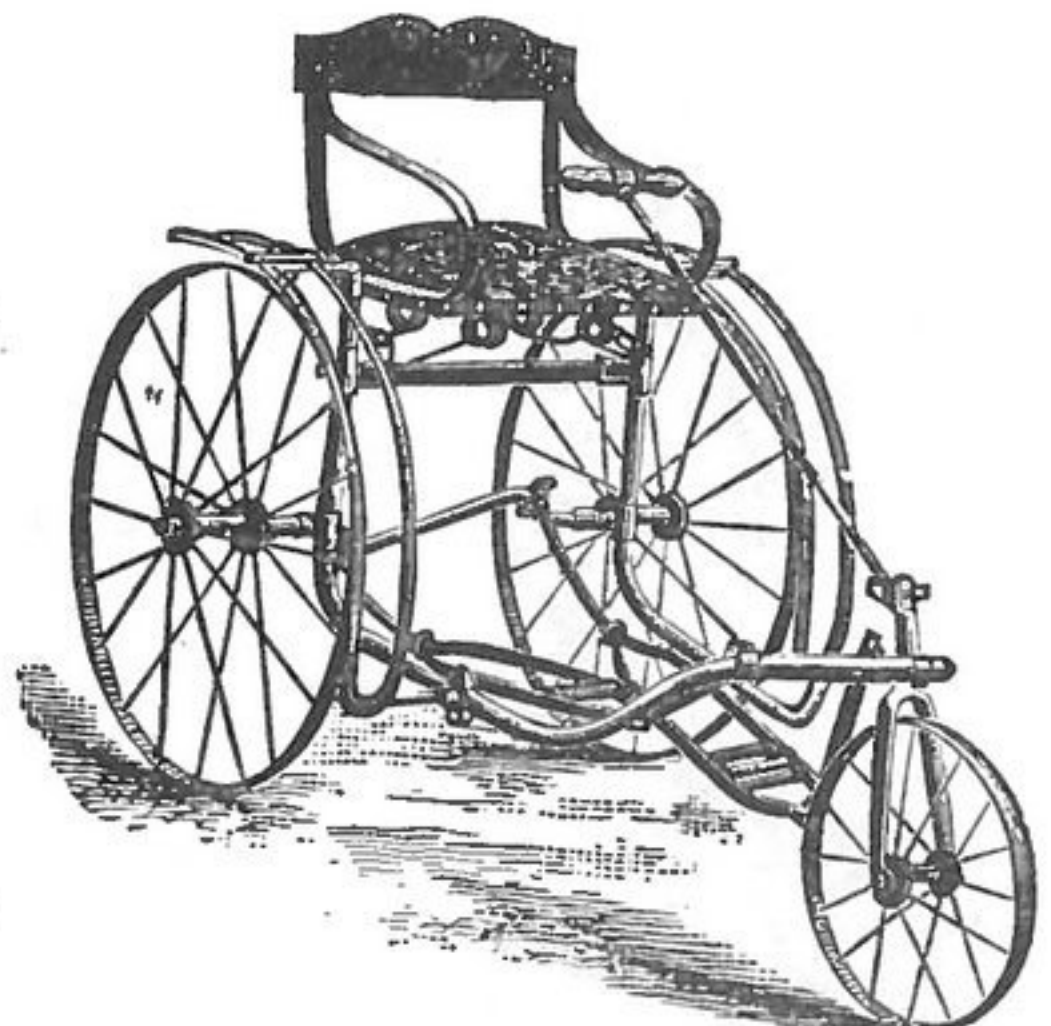
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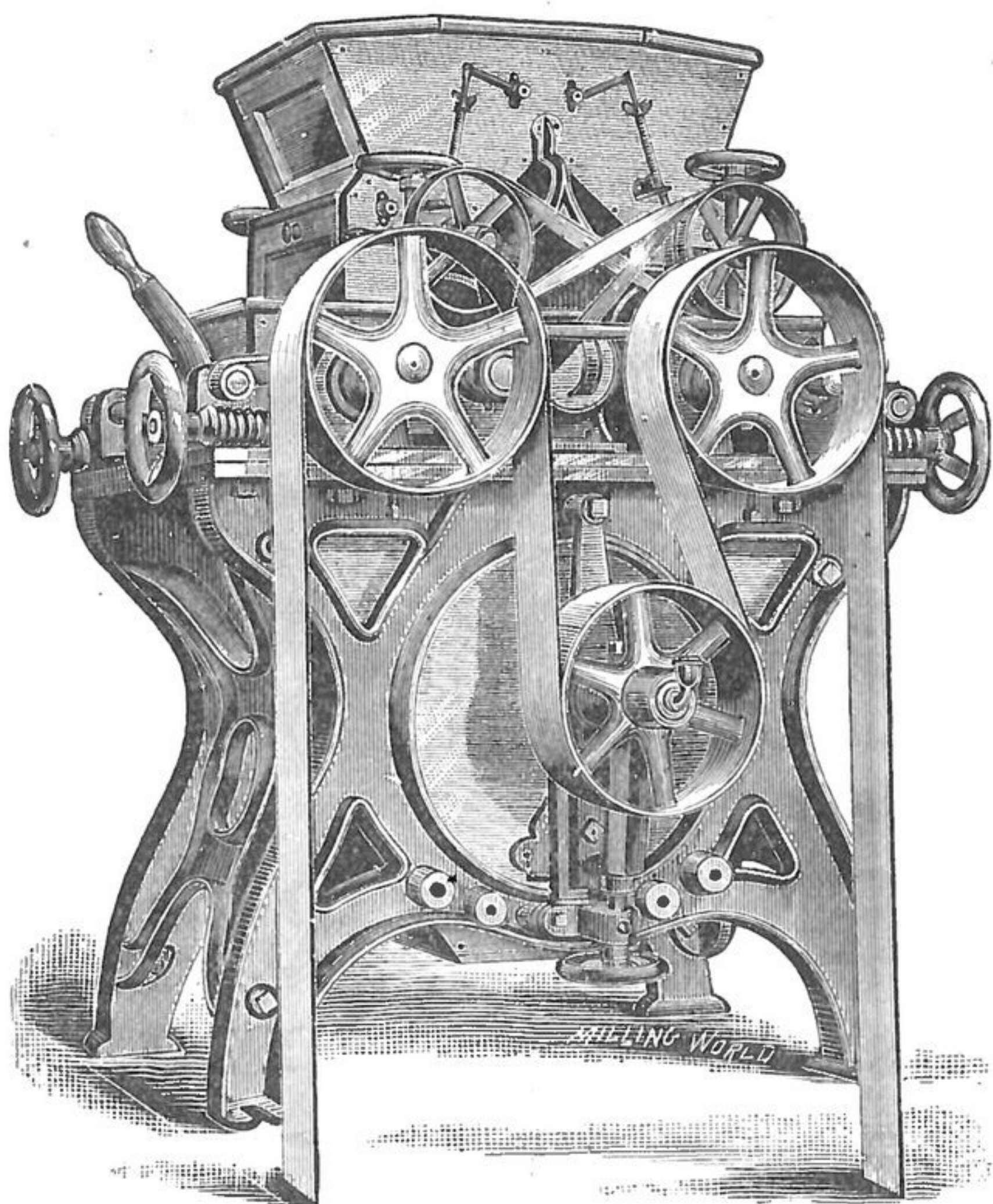
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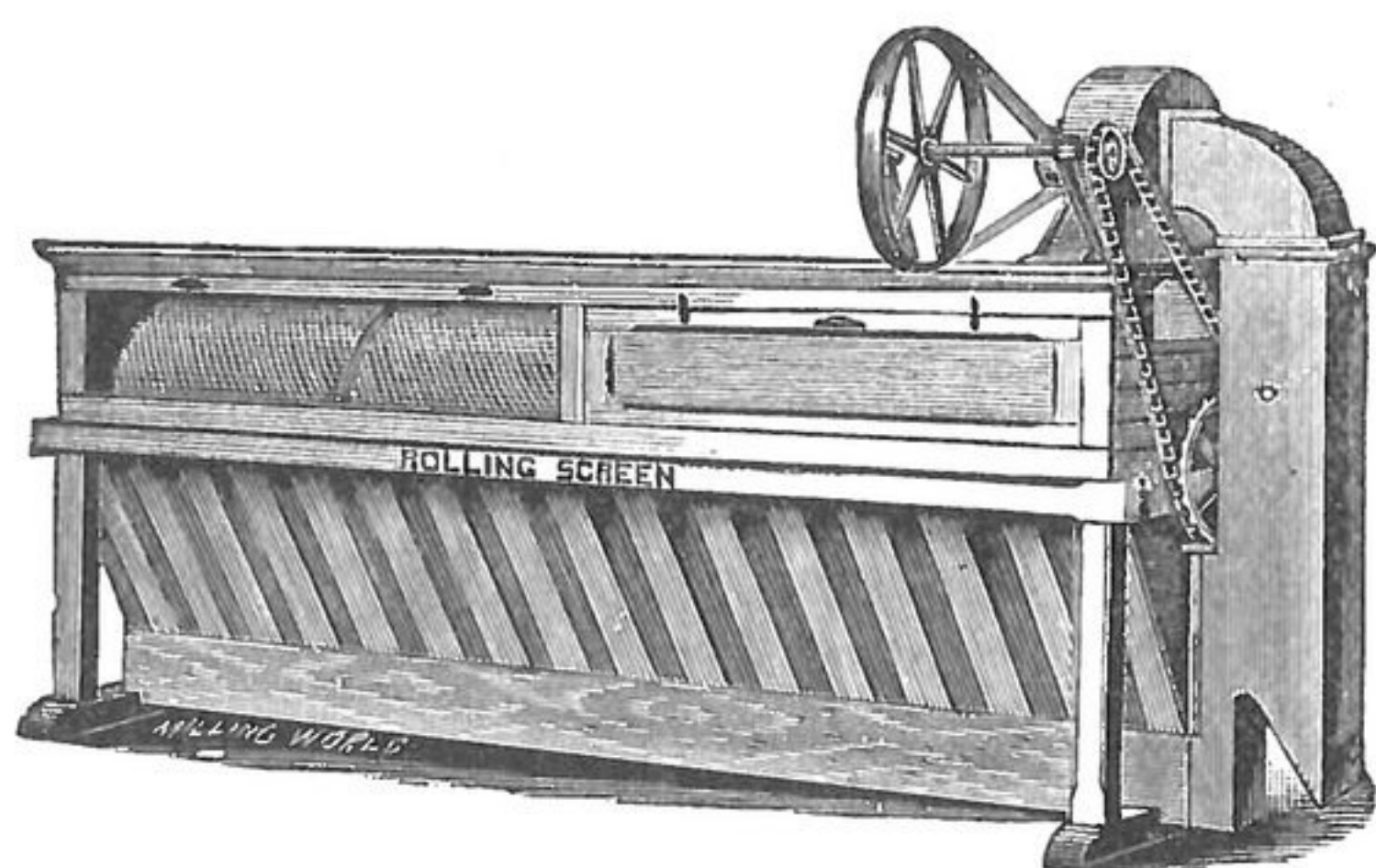
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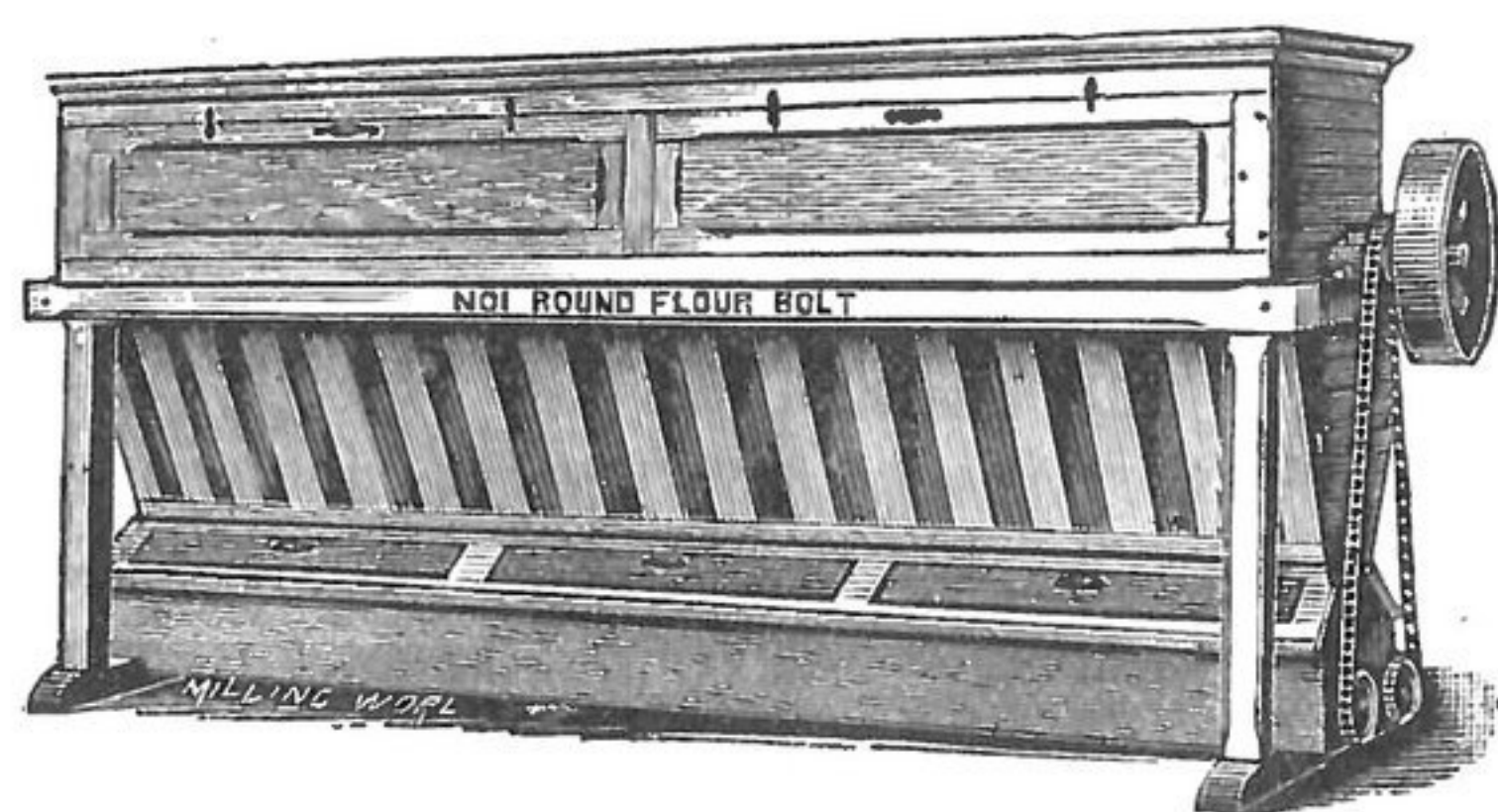
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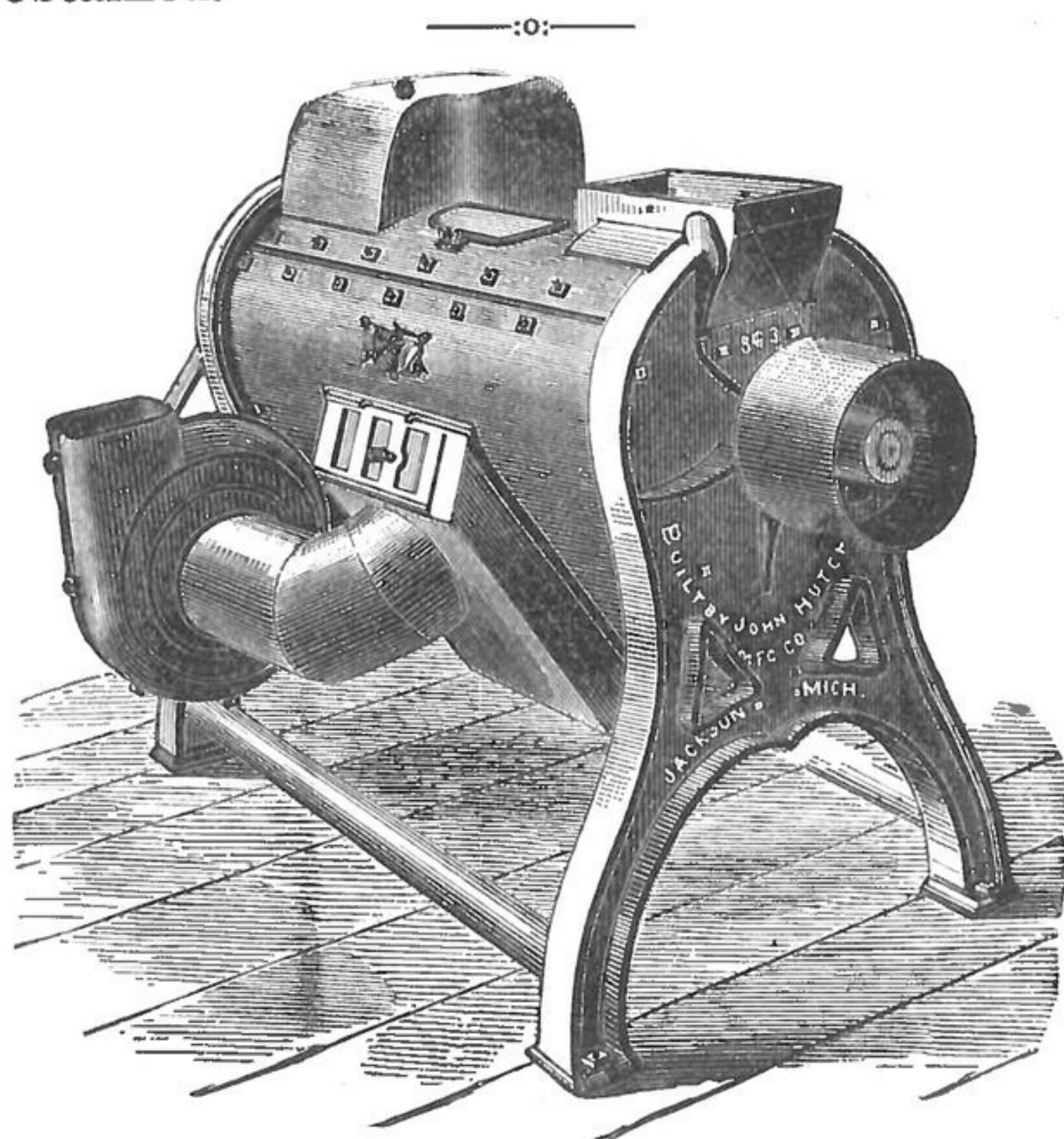


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Send for Estimates for Our Full Roller Mills of any Capacity.



The above cut shows our New Round Slow Running Flour Bolt. We also build a Cylinder or Round Scalping Reel and we have lately built a number of new mills of medium capacity, using our Roller Mills, our Round Flour Bolts and Scalping Reels, getting better results than is usually obtained.



Hutchison's New Dustless Iron Corn Sheller, especially adapted for Mill and Elevator use.

—:ADDRESS ALL CORRESPONDENCE TO:—

## John Hutchison Mfg. Co.

JACKSON. . . MICHIGAN.





ELEVATOR BUCKET.

## CORRUGATIONS

What we know of corrugations can be found out by writing to US, or H. W. Caldwell, Chicago, Ill.

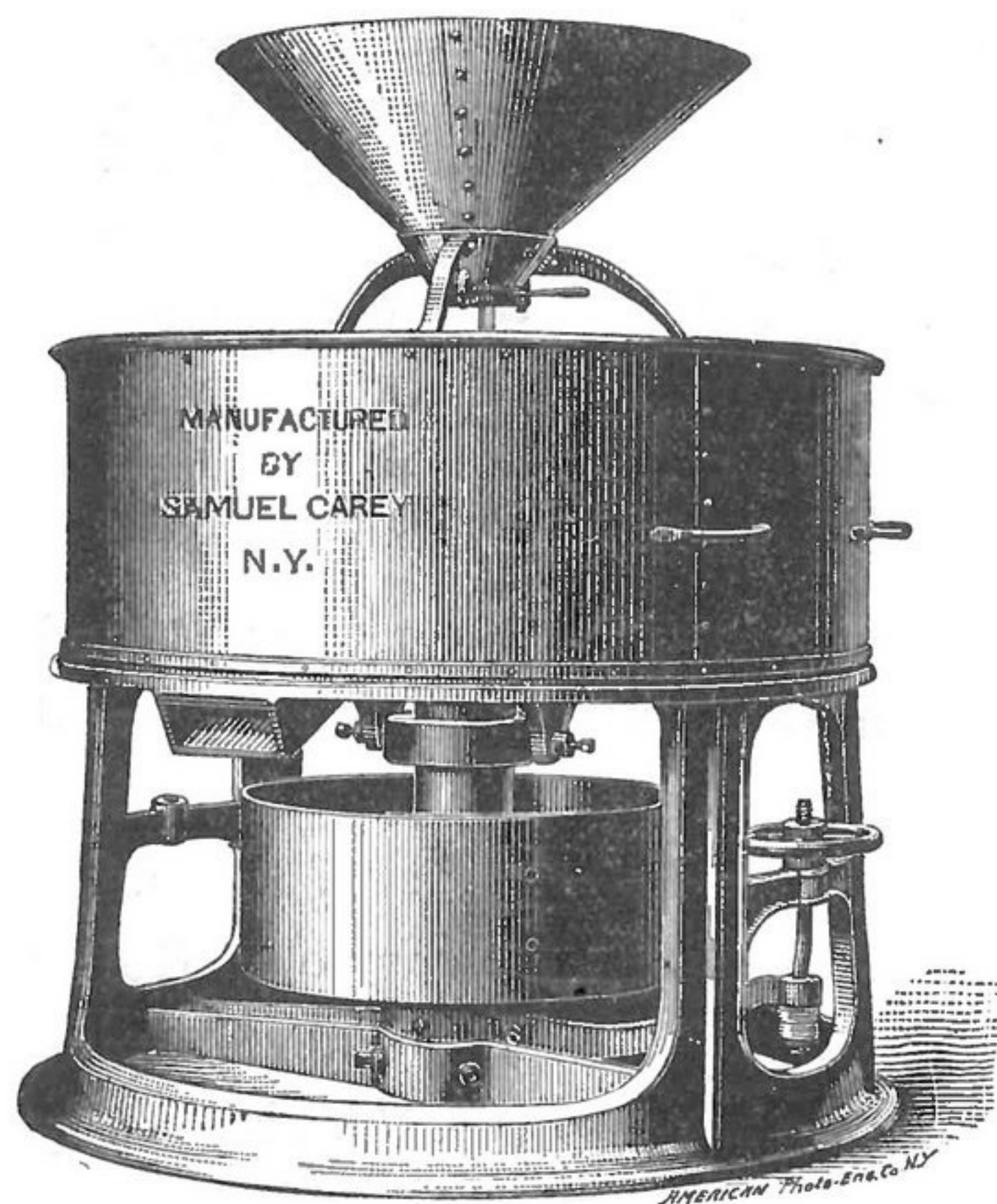
Stamping and Pressing of Sheet Metals for all Classes of Work. Also Tinning, Galvanizing and Japanning.

THE AVERY STAMPING CO.,  
Successors to The Avery Elevator Bucket Co.,  
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CALDWELL'S PATENT.



## SELF-TRAMMING PORTABLE MILL

BEST GRINDING MILL MADE.

## BOLTING CLOTH

AND

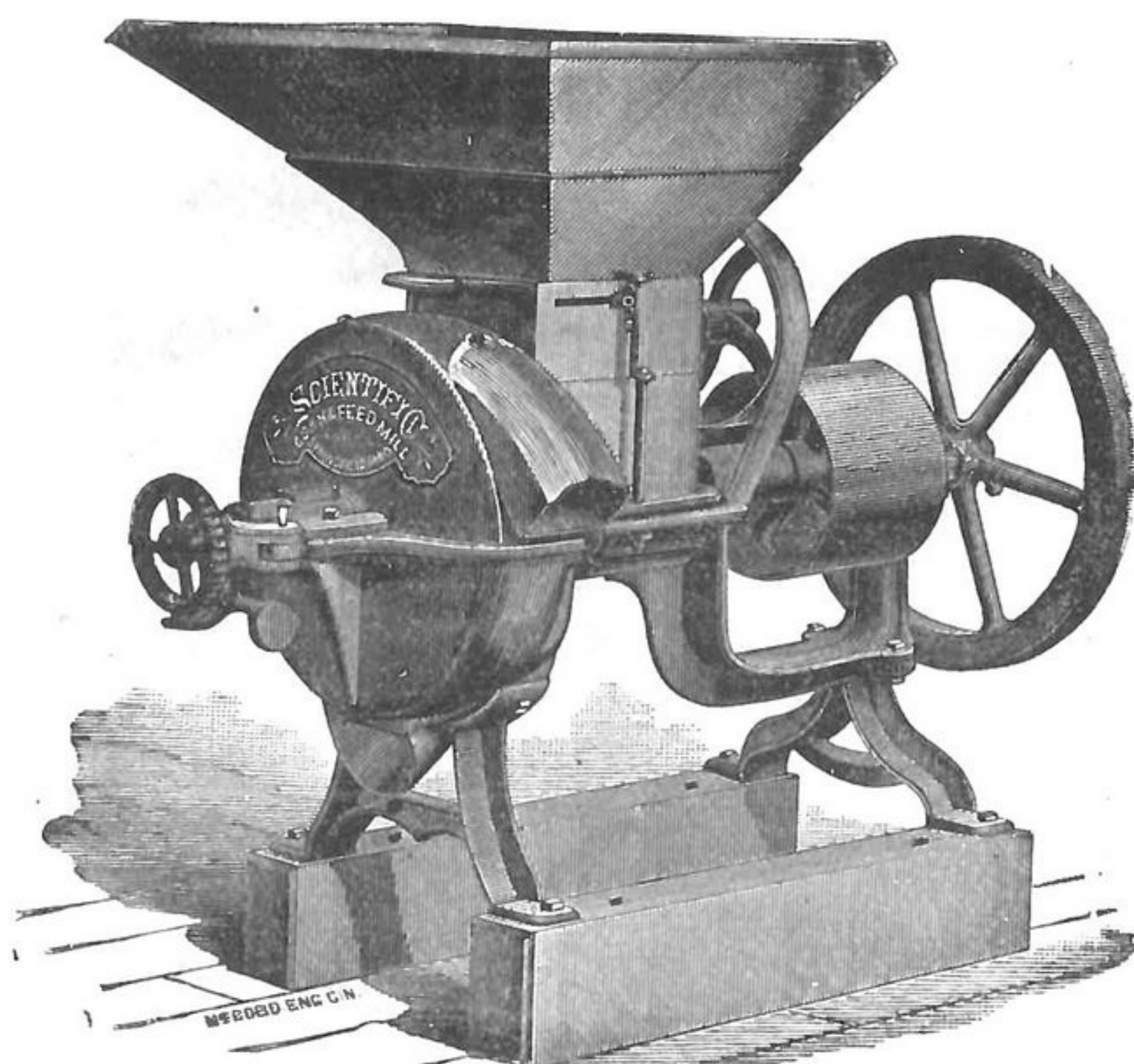
## BURR AND ESOPUS MILLSTONES

WRITE FOR DISCOUNTS.

## SAMUEL CAREY,

17 Broadway,

NEW YORK.



## THE SCIENTIFIC GRINDING MILL.

POSITIVELY THE BEST MILL ON EARTH.

GRINDS PERFECTLY, EAR CORN, SHELLLED CORN,  
AND ALL GRAINS.

## GRINDING PLATES A SPECIAL METAL

*Hard as Steel, Guaranteed to Grind from Five to Eight  
Thousand Bushels before wearing out.*

SEND FOR ILLUSTRATED CATALOGUE, PRICES, ETC.

## THE FOOS MFG. CO.

SPRINGFIELD OHIO.

## STILL ON TOP.

Perhaps the HIGHEST COMPLIMENT that could be paid the "Salem" bucket is the fact that during the past few years ITS SHAPE HAS BEEN SO CLOSELY IMITATED by other manufacturers as to infringe our patented rights, but experience reveals the IMPERFECTIONS OF IMITATIONS, and we therefore take it as a FURTHER COMPLIMENT to the "SALEM" bucket that some of its old patrons who were *Induced to Try the Imitations have now Returned to the Salem Bucket, thereby Acknowledging it to be the Most Satisfactory.* Don't be deceived by other makes of buckets that are claimed to be "Just as Good." Insist upon having the ORIGINAL AND RELIABLE SALEM BUCKET. All legitimate Salem buckets are plainly marked with the word

## SALEM

W. J. CLARK & CO., SOLE Manufacturers SALEM, OHIO.

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